

INSTANT MESSAGING USES AND GRATIFICATIONS:  
HOW SHYNESS AFFECTS MOTIVATIONS  
FOR CHATTING ONLINE

Thesis

Submitted to

The College of Arts and Sciences of the  
UNIVERSITY OF DAYTON

In Partial Fulfillment of the Requirements for  
The Degree

Master of Arts in Communication

By

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Dayton, Ohio

February, 2006

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## ABSTRACT

### INSTANT MESSAGING USES AND GRATIFICATIONS: HOW SHYNESS AFFECTS MOTIVATIONS FOR CHATTING ONLINE

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The purpose of the current study was to examine instant messaging programs from a uses and gratifications perspective. Data were collected from 402 college students at a Midwestern University. The first part of the study explored the motives individuals have for choosing to communicate via instant messaging programs. Results showed that the motives individuals have for using instant messaging programs — affection, pleasure, inclusion, relaxation, escape, and control—are consistent with the motives found in interpersonal communication. More specifically, the most common need filled through instant messaging programs is escape (79.2%), while the least common motive for use is control (40.9%).

In addition to a general overview of the motives of instant messaging programs, the current study also analyzed the role shyness plays in determining to whom one talks, how long they chat, and what motives they have for communicating online. Results showed that highly shy individuals are significantly more likely to use instant messaging to fill inclusion and affection needs than their less shy counterparts, even after controlling for their levels of writing apprehension and computer anxiety. A second analysis suggested that shyness affects the rate at

which individuals talk to coworkers, friends from school, peers, and individuals they have never met in person. However, shyness does not affect the rate at which one talks to acquaintances, family, or friends from home. Results from a third test showed that shyness is not related to the amount of time one spends online, but it may affect the initial rate of adopting instant messaging programs. The implications of these findings are discussed within a uses and gratifications framework.

## ACKNOWLEDGEMENTS

To all of my teachers nourished my desire to learn and explore the world around me. Thank you for showing me that the road to knowledge is a journey worth taking.

To my fellow graduate students for making this process an engaging and enjoyable pursuit. Thank you for helping me keep my sense of humor and my sanity – and for empathizing with the joys and struggles of graduate school.

To Dr. Teresa Thompson for believing in my abilities and making the five-year B.A./M.A. program a reality. Thank you for your energy, enthusiasm, and support.

To Dr. Ronda Scantlin for offering your suggestions and challenging me to do my best. I have appreciated your support and throughout this process.

To Dr. Danny Robinson, my advisor, for always having time to meet with me, encourage me, and point me in the right direction. Thank you for taking my research as seriously as you take your own. I cannot tell you how much I appreciate your time, suggestions, and insight — both about academics and life in general.

To my family Tom, Ranette, and Mike Bell for loving me unconditionally and encouraging me to reach for the stars. Thank you for teaching me that I can achieve anything I set my mind to.

To Eric Lally for being my biggest supporter and best friend. Thank you for celebrating my victories and sharing in my excitement. Your constant love and support is a blessing that means more to me than I could possibly say.

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## CHAPTER 1

### INTRODUCTION

Until recently, the rate of technological progress in society was not characterized by the exponential growth it experiences today. People communicated primarily face-to-face and through letters. Alexander Graham Bell's telephone allowed people in different locations, whether next-door neighbors or across-country family, to talk to each other synchronously while physically separated. Over the past few decades, there has been a technology revolution, resulting in an array of new communication media (McKenna & Bargh, 1999; Tyler, 2002). Decades ago a single computer was the size of a laboratory, was used mostly by the military, and scientists believed there would never be a need for computers in the home. Yet, technology persevered, and today's computers can be the size of notebooks and are found in homes and schools around the world. With the advent of microchips, computers are becoming faster and smaller, and they have larger capacities.

More specifically, computer technologies have evolved into accessible, flexible, and diverse modes of communication. These new technologies support functional, entertainment, and interpersonal predilections. People around the world, whether for business or personal use, utilize computer-mediated communication to send and receive messages. Computer mediated communication is "synchronous or asynchronous electronic mail and computer conferencing, by which senders encode

in text messages that are relayed from senders' computers to receiver" (Walther, 1992, p. 52).

Computer mediated communication covers a variety of electronic communication channels, including virtual chat rooms, listservs, message boards, newsgroups, e-mail, text-based multi-user simulation environment (MUDs), party-line networks hosted over servers (IRCs), and instant messaging programs. Instant messaging programs – such as AOL Instant Messenger, ICQ, Lotus SameTime, MSN Messenger, and Yahoo Messenger – are online services that allow synchronous communication over an Internet connection. Users create a “buddy list” and add the screennames, or unique identification usernames, of friends, family, and co-workers. Users can then chat, or carry on interpersonal conversations, in real time through their computer. It is important to note that the majority of computer mediated communication, including instant messaging programs, is text based (Tidwell & Walther, 2002). Newer instant messaging programs, however, offer features in addition to the text based chat, including video messaging, online games, and the ability to send pictures and files.

The decreasing cost of computers has made it possible for people from many socioeconomic classes to own such a tool. Further, the variety of plans and way to access the Internet — through the telephone, cable line, or other provider — means millions of people are accessing the Internet. Individuals turn to the Internet for: interpersonal utility, passing time, obtaining information, convenience, and entertainment (Papacharissi & Rubin, 2000). In a 1998 survey, 94 percent of people reported the Internet made communication with friends and family easier (Mukopadhyay, Szczypula, Kiesler, & Scherlis, 1998), and 87 percent regularly use it for that purpose (D'Amico, 1998). People regularly use the Internet to communicate.

Nielsen (2004) ratings suggest that, on average, Americans spend over 71 hours at work and 27 hours from home using the Internet each month.

The advent of computer mediated communication has profoundly affected how people communicate (Williams & Rice, 1983). To study these effects, much research in the field has dedicated itself to comparing how groups of students interact in face-to-face versus computer mediated communication (e.g., Hiltz, Johnson & Turoff, 1986; Poole, Holmes, Watson & DeSanctis, 1993). These studies are interesting because computer mediated communication offers individuals an additional channel through which to communicate. Rubin and Rubin (1985) noted that mediated and personal channels of communication can “coexist and substitute for each other” (p. 49). Usually, individuals complement face-to-face communication with computer mediated communication, but it is also possible to use only one channel to communicate.

The purpose of the present inquiry is to examine instant messaging programs. While a variety of research has touched upon the uses and gratifications or motives that individuals have for using other current technology — specifically e-mail — as well as popular media, including telephones, radio, and television, there has not yet been a focus on instant messaging programs. Some studies have focused on MUDs and IRCs, but the present study will narrow down the scope of synchronous computer mediated communication to a more specific entity — instant messaging programs. These programs are particularly interesting because of their popularity with adolescents, college students, and 20-somethings. Instant messaging programs are a popular way for individuals in this age range to stay in touch, as individuals are able to communicate with friends, plan events, and share information from the comfort of their room. Furthermore, unlike telephone

conversations, which normally permit only one conversation at a time – with the exception of three-way conference calling, which permits three or more persons to be on the line — instant messaging programs allow individuals to participate in as many conversations as they wish. People may choose to chat with just one other individual, or have 10 separate conversations going on at once. Such a capability is revolutionary, as it harbors the possibility of changing the way we understand communication. While groups of people may have several smaller conversations ongoing at the same time, never before has one person had the opportunity to participate in multiple conversations at once. As this program becomes increasingly popular, especially in colleges where students keep in contact with friends from home, family members, peers at their university, and perhaps even their professors, it will be valuable to understand what motives individuals have for using instant messaging programs, and how those motives compare to traditional means of communication with friends and family (particularly face-to-face communication).

The present study uses a uses and gratifications framework to explore instant messaging programs. Uses and gratifications will be an effective method with which to analyze this topic because it is appropriate for studying both mediated and interpersonal communication (Rubin & Rubin, 1985), and it is suitable for researching new communication technologies (Rubin & Bantz, 1987). Additionally other media channels, including radio, television, telephone, Internet, and e-mail, have successfully used this structure. In identifying the specific gratifications of those who employ instant messaging, it may be possible to understand why certain demographics, notably shy individuals, adopt interactive technologies and for what reasons.

In addition to looking at the general motivations individuals have for using instant messaging programs, the present study will also analyze the role shyness plays in the reasons individuals have for using these programs. Shyness, rather than communication apprehension, was selected as a main focus for this study because it is a more appropriate variable for understanding one's motivations for using instant messaging programs.

Communication apprehension is one's level of fear or anxiety associated with real or expected interaction with others (McCroskey, 1978), and research has shown that high communication apprehension in one area — group anxiety, meeting anxiety, interpersonal anxiety, or public speaking anxiety — is highly correlated to communication apprehension in other areas (McCroskey, 1970). As such, individuals who are highly communication apprehensive may also be highly apprehensive about all forms of communication, including instant messaging programs and computer mediated communication.

Shy individuals, on the other hand, lack interpersonal competence in face-to-face interactions (Baker & Edelmann, 2002) and are likely to engage in less rewarding and ineffective communication (Bruch, Gorsky, Collins & Berger, 1989; Cheek & Buss, 1981; Cheek & Melchior, 1986; Jones & Carpenter, 1986; Pilkonis, 1977). However, several studies analyzed the interaction of shy people who used e-mail, chat rooms, and other technological innovations. The findings of these studies suggest promising results in that shy individuals are able to overcome their shyness by using alternative channels of communication (Albright & Turkle, 1995; Conran, 1995; Kelly, Duran, and Zolten, 2001; Roberts, Smith & Pollock, 2000; Reid, 1991; Stritzke, Nyuyen, and Durkin, 2004).

In light of these previous studies, shy individuals may be able to use instant messaging programs as an effective form of communication, and even as a functional alternative to face-to-face communication, whereas the chance for communication apprehensive to do so is less likely. The present study intends to build on the previous shyness and computer mediated communication research by using instant messaging programs to look at the motives of shy individuals.

Communication theory holds that transaction takes place in a context, which includes one's physical and psychological environment. As shyness does not occur in a vacuum and may be affected by other communication predispositions, computer anxiety and writing apprehension will also be examined in the present study. Because instant messaging programs are operated via a computer and involve text-based communication, individuals' levels of computer anxiety and writing apprehension need to be considered as these two factors may contribute to their willingness to use such programs. Thus, determining subjects' amounts of shyness, computer anxiety, and writing apprehension will allow the researcher to establish a baseline from which to study the affects of each variable, as well as to factor out the latter two variables to see if shyness is related to instant messaging use even without their presence. In an attempt to uncover how these forms of anxiety affect the motives individuals have for using instant messaging programs, this study will determine the relation of these variables to the amount of instant messaging use.

The results of this study are important to communication research and theory for two reasons. The first is because they will provide preliminary research on the motives individuals have for using instant messaging programs. Such information will only serve to bolster the extant research on both uses and gratifications and interpersonal communication motives. Second, if shy individuals are able to

effectively use instant messaging programs to fulfill their interpersonal needs and engage in effective and appropriate communication with less fear of rejection, instant messaging programs can be seen as a valuable and functional alternative to face-to-face communication. The examination of literature will review the constructs necessary to understanding these concepts.

## REVIEW OF LITERATURE

This section will first offer an overview of the uses and gratifications theory, which provides a theoretical foundation for the present study. It will then explore computer mediated communication and the debate that has ensued over whether or not it should be studied as an interpersonal tool and if it is a functional alternative for face-to-face communication. Research on shyness will then be examined, offering a brief history, examination of the effects of shyness, and a discussion of the relationship between of shyness and communication. Computer anxiety and writing apprehension research will be reviewed to offer a broad assessment of issues that may hinder or facilitate instant messaging use. The literature review will conclude with a discussion about the possibility that computer mediated communication may offer a functional alternative to face-to-face communication, and a review of the theories that provide a backbone to this study.

### Uses and Gratifications

The uses and gratifications perspective explains how and why individuals, groups, and society use the media. In contrast to other contemporary theories, such as the hypodermic needle theory, that studied what affect the media have on an audience, uses and gratifications theory researches what people do with the media and why. This perspective has three objectives. It seeks to explain how individuals use media to gratify their needs, to understand the underlying motives for media use,



and to identify the positive and negative outcomes of needs, motives, and media use (Katz et al., 1974).

Uses and gratifications theory has three core assumptions: individuals use the media to fulfill certain expectations, are aware of and can state their motives for using particular media, and actively seek out the media to satisfy particular needs (Katz et al., 1974). When an individual has a need for something, he or she then has a motive that leads behavior to satisfy the need (Rosengren, 1974). For example, “a need to belong...may produce a motive to use communication channels to seek companionship” (Rubin & Windahl, 1986, p. 191). As specific gratifications are identified, it will be possible to understand what demographic group adopts interactive technology and for what reasons (Williams, Philips & Lum, 1985; Williams, Rice & Rogers, 1988).

Rather than merely studying *what* effects media has on an audience, uses and gratifications theorists aimed to study *why* people choose that media. During the period in which uses and gratifications came about, communication scholars studied the media channels available to them — radio and television. Herzog (1944) analyzed radio soap operas to determine what needs such programming fulfilled for women listeners. Motivations for listening to the radio included companionship, bracketing the day, changing one’s mood, counteracting loneliness or boredom, gaining information, vicariously participating in events, and as a means to social interaction (Mendelsohn, 1964). Lasswell (1948) identified surveillance, correlation, entertainment, and socialization as general functions of media use. Later research on television found that people use this medium to pass time, for companionship, for arousal or excitement, to view specific programs, for information, to relax, to escape, for entertainment, and for social interaction (Rubin, 1981). In studying television,

Rubin (1979) uncovered six reasons for television use in children and adolescents: learning, passing time, companionship, to forget or escape, excitement or arousal, and relaxation. Later refining these motivations for an adult audience, Rubin (1983) found that the strongest uses were to pass time/out of habit, companionship, and escape.

Interestingly, gratifications vary not only from medium to medium but also between various groups who use the same media. Greenberg and Dominick (1969) found that the gratifications of TV viewing are significantly different among social classes, particularly in low-income teenagers compared to their middle-class counterparts. In a later study, Greenberg (1974) noted that children's motivations for watching television fluctuated by age. Other research supports these findings by noting age and education influences on television use (Rubin, 1984).

Over the years, researchers have come to recognize the importance of newer interactive media and believe their uses and gratifications need to be identified (Katz et al., 1974; Morris & Ogan, 1996). Thus, more recent studies have extended uses and gratifications research to e-mail and the Internet, showing that these technologies are used for entertainment, socialization, relationship maintenance, and emotional support (Finhold & Sproull, 1990; Haythornthwaite, Wellman, & Mantei, 1994; McCormick & McCormick, 1992; Papacharissi & Rubin, 2000).

As new technology diffuses and is adopted by the public, the goal of research turns to why audiences are using the new medium. For example, when television became a popular channel and permeated homes, scholars researched the gratifications of television viewing, and how it was different from or similar to radio. However, emerging technology has shifted our attention to newer channels as well. When comparing the gratifications of the telephone to e-mail, Dimmick et al. (2000)

found that the telephone is superior on sociability gratifications, such as expressing emotions, giving advice, and sharing information. However, e-mail ranks higher than the telephone on gratification-opportunities, including its simplicity to use, ease of contacting someone, convenience, and ability to overcome scheduling issues due to time or distance. As e-mail emerged as a new, faster, cheaper, and more efficient means of sending written messages to others, research noted that individuals also use e-mail for sustaining interpersonal relationships (Dimmick et al., 2000; Stafford et al., 1999). In fact, Stafford et al. (1999) noted that many people use e-mail “not simply for the reasons of maintaining the relationship, but also for the gratification opportunities the medium affords” (p. 667).

If motivations vary based on social class and age, it stands to reason they could vary based on other individual differences, including race, gender, income, and anxiety levels. The current investigation aims to discover how one’s levels of shyness, computer apprehension, and writing apprehension are related to the gratifications of instant messaging. Uses and gratifications is fitting for this study because it is appropriate for studying both mediated and interpersonal communication (Rubin & Rubin, 1985). Further, it is suitable for researching new communication technologies (Rubin & Bantz, 1987). As research has applied uses and gratifications to e-mail and Internet, it follows that it could also be successfully applied to the use of instant messaging programs.

### Interpersonal Communication Motives

According to uses and gratifications, individuals select interpersonal and mediated channels to fulfill interactive and informational needs depending on their availability, one’s perceptions of the medium, and the type of need to be fulfilled

(Rubin, 1994). Furthermore, once a user finds a medium that is best able to meet his or her needs, it will be the preferred medium (Perse & Courtright, 1993). As time goes by, new technology presents individuals with more and more channels from which to choose. Thus, the emergence of new channels allows individuals another alternative to meet their needs. For some, the new channel will be readily available, viewed positively, and able to satisfy the individual's need. In this situation, the individual will make the switch to the new channel because it better suits him or her. Conversely, for others, the new channel will not be accessible, will be viewed negatively, and will not be as satisfying. Those individuals will not switch to the new channel because their current one better meets their needs. What is of importance to researchers is the kind of people who make the switch to the new channel – and why.

Media and interpersonal communication are not separate entities. In fact, both are used by people “to connect (or sometimes disconnect) themselves...with different kinds of others” (Katz et al., 1974, p. 23). Further, media structure and regulate our communication environment, facilitate communication and reinforce or change interpersonal roles (Lull, 1980) while acting as a source of information that supplies conversational topics and allows individuals to express their opinions, influence others, and gain social approval (Chaffee, 1986). As such, instant messaging is a unique form of communication, as it is a type of interpersonal communication that takes place through a specific medium – the Internet. The interpersonal communication motives scale provides a comprehensive way to study this phenomenon. While the primary use of computer mediated communication was argued to be for sustaining relationships (Stafford et al., 1999), the interpersonal

communication perspective permits a more in-depth analysis of *motives* for using computer mediated communication to sustain relationships.

As previously noted, many uses and gratifications studies support the idea that individuals use media to satisfy interpersonal needs. The interpersonal communication motives research is based on the uses and gratifications perspective and provides a conceptually rich and useful lens by which to view the process of interpersonal communication, particularly family communication (Graham, 1994). These motives are important to the communication field because they reflect both characteristics of people and because they have an influence on communicative behavior; motives affect who people talk to, how they talk, and what they talk about (Rubin et al., 1988).

The interpersonal communication motives scale identifies reasons *why* people engage in interpersonal communication. This perspective is based on the idea that people have certain goals for communication, and motives, an internal state of readiness, are the reason they act to achieve that goal. Further, “people are mindful of their communication choices,” recognize their motives for communicating, and their choices are “purposeful and goal directed” (Graham, Barbato, & Perse, 1993, p. 173). Rubin et al (1988) identified six motives for engaging in interpersonal communication. Affection is communicating as a means to express concern, caring, and appreciation for others. Control is a technique to gain compliance from or express dominance over others. Escape is used as a way to avoid engaging in other activities, to procrastinate, or to fill time. Inclusion is akin to companionship, and is a means to be with others and avoid loneliness. Pleasure is used as a means to be entertained, stimulated, sociable, or to have fun. Finally, relaxation is used to relieve tension and unwind.

A relationship exists among motives, traits, and communication choices and outcomes (Rubin et al., 1988). Additionally factors, such as locus of control, gender, culture, relationship to the person with whom one is communicating, and one's own personal characteristics also impact one's communication motives. Various studies have looked at the relationship between communication apprehension, computer anxiety, and computer mediated communication. Those with high communication apprehension are less likely to engage in communication due to their feelings of anxiety, while those with low communication apprehension are likely to communicate for pleasure, affection, and control (Kondo, 1994; Rubin et al., 1988; Rubin, 1993). Additionally, those with high communication apprehension are likely to communicate for inclusion (Rubin et al., 1988) and escape (Kondo, 1994).

Shyness and communication apprehension are similar in that they impact one's ability to communicate appropriately and effectively, and the two variables correlate at .60 (McCroskey & Richmond, 1982). Due to this relationship, it can be inferred that those who are very shy engage in communication for different reasons than those who are less shy. This study will test this theory by analyzing subjects' interpersonal communication motives for using instant messaging programs, while also considering the role shyness plays in determining one's motives for use.

### Shyness

The notion of shyness is no stranger for researchers. In fact, records show shyness research dates back to at least 1896, when Dr. Harry Campbell reported to the British Medical Society on the matter. While often studied, no single theory predominates in shyness research. Some theorists argue that shyness is hereditary and part of one's personality from birth. They maintain that shyness is a result of an

overactive nervous system, which makes the individual easily excitable. As even ordinary events can cause their sensitive nervous systems to be agitated, shy individuals avoid situations that could potentially lead to experiencing heightened arousal. On the nurture side of the debate, behaviorists maintain that shyness is not inborn, but rather, learned. Researchers ascribing to this belief argue that shyness results from an individual's failure to learn the proper ways to behave in social situations. Shy individuals lack the social and communication skills that allow them to easily and confidently interact with others.

It is important to note that neither the biological nor behavioral approach to shyness is necessarily the correct approach. In fact, as humans are not either a direct result of their genetics or their environment, but rather an amalgamation of both, much can be gained from looking at shyness as the product of both factors. The interactionist perspective combines elements from each theory and can provide a more complete picture of the phenomena, as it maintains shyness results from the innate characters of the individual interacting with the environment.

For the purposes of this research, shyness will be conceptualized as "discomfort and/or inhibition in interpersonal situations that interferes with pursuing one's interpersonal or professional goals" (Henderson, Zimbardo, & Carducci, 2001, p. 1522). Shyness results from a fundamental concern in which shy individuals experience anxiety over the mere perception or thought of being evaluated, and possibly rejected, by others (Pikkonis, 1977). Those who are shy are overly focused on themselves and are preoccupied with their own thoughts, feelings, and reactions (Henderson et al., 2001).

All individuals fall somewhere on a spectrum of shyness, and shyness itself can range from mild discomfort to an inhibiting phobia (Henderson & Zimbardo,



2001). Highly shy individuals may have a difficult time overcoming their shyness, as they are caught in a vicious cycle that promotes their behavior. Once in a communication setting, shyness can hamper one's ability to communicate, as a shy individual may hesitate in making spontaneous utterances, be reluctant to express opinions, and make verbal and nonverbal responses that reduce his or her likelihood of further interaction (Crozier, 2001). In support of this idea, Cheek and Melchior (1986) found that the typical protective style shy individuals use, combined with their negative cognitions, hamper their opportunities for successful social interactions. Research suggests shy individuals are anxious in social situations because of their fear of rejection (Jackson, Towson, & Narduzzi, 1997) as well as their perceived belief that they lack interpersonal competence in face-to-face interactions (Baker & Edelman, 2002).

Shyness is most prevalent in either social contexts or ambiguous situations where the shy individual feels he or she is under scrutiny (Crozier, 1990). As communication is most likely to occur in a social context, those who are shy are disadvantaged in communication. Research shows that, in offline contexts, shy individuals report having less social support and fewer and smaller friendship networks, as well as participating in fewer interactions than those who are nonshy, and the interactions they do engage in are characterized as more passive (Jones & Carpenter, 1986). When compared to their otherwise similar, nonshy counterparts, Parrot (2000) found shy individuals are more likely to deem their network as less satisfying and less supportive; as they find their networks unrewarding, they are more content to keep to themselves and minimally participate in social settings. Similarly, compared to less shy individuals, it takes shy adults a longer period of time to begin speaking in a conversation with an unknown person, they are slower to



break a silence or lull in conversation, and they speak for a smaller proportion of time (Bruch, Gorsky, Collins, & Berger, 1989; Cheek & Buss, 1981; Pilkonis, 1977).

As shyness influences one's level of comfort within a communication situation, as well as his or her ability to engage in a successful communication encounter, shyness is an important factor in the area of communication.

### Shyness and the Computer Mediated Communication Environment

While shy individuals may be disadvantaged in communication situations, their deficiency can be manageable. Through clinical intervention, individuals may confront and manage their anxieties — including shyness. Interestingly, Carducci and Clark (1993) discovered that 78 percent of shy individuals think it is possible to overcome their shyness, and 87 percent of shy individuals convey they are willing to take steps to do so. Many shy individuals put forth great effort in their attempts to overcome their shyness. Their efforts have included forcing themselves to be in social situations, trying to change their cognitive thought process, attending workshops, reading self-help books, seeking professional help, and even abusing substances in order to lower their inhibitions (Carducci, 2000). Additionally, a variety of pharmacological drugs and cognitive and behavior therapies, which are beyond the scope of this review, are often used as forms of interventions.

Thus, using computer mediated communication as a functional alternative to face-to-face communication is a viable option that would be beneficial to a majority of shy individuals as they are willing to use it and believe it would help them. Further, computer mediated communication is a safe, healthy, easy, fairly economical, and effective means with which to battle shyness. Research has reported that shy individuals have discovered that they are less shy when participating in synchronous

computer mediated communication than in face-to-face situations (Albright & Turkle, 1995; Conran, 1995; Reid, 1991). Such research illustrates that using computer mediated communication as the preferred channel for communication, and as a functional alternative to anxiety-arousing face-to-face situations, may reduce shyness and anxiety. Participating in computer mediated communication boosts the confidence of shy individuals and allows them to see that they are able to successfully communicate as well as begin, maintain, and enjoy relationships. Wallace (1999) notes that the reinforcement shy individuals receive for less shy behavior online may lead to less shy behavior in offline settings. Thus, the confidence received from the mediated setting may then extend to offline, face-to-face encounters, decreasing the individual's level of shyness in multiple contexts using multiple channels.

An important study in the area of shyness was conducted on the effects of computer mediated communication use on shy individuals (Roberts, Smith & Pollock, 2000). In self-report, these individuals indicated they felt less inhibited while communicating in a computer mediated communication environment than they did in offline, face-to-face situations. In the second part of the study, Roberts et al (2000) monitored the subjects' online behavior for six months and compared a group of individuals who ranked as "highly shy" on a shyness measure to those who were "low shy" on the same measure. The findings of this study concluded that individuals who were shy in face-to-face contexts reported feeling less so online. In fact, their levels of shyness online matched the levels of the nonshy group. Based on these results, Roberts et al. (2000) argue that computer mediated communication usage improves individuals' social skills while allowing them a means by which to break out of a cycle of shyness.

Supporting these findings, Stritzke, Nyuyen, and Durkin (2004) compared the interactions and levels of shyness of shy and nonshy users in both online and offline (face-to-face) contexts. Results indicated that shy individuals were different from nonshy individuals in face-to-face communication encounters on the measures of rejection sensitivity, initiating relationships, and self disclosure; however, the two groups were not significantly different in online contexts (Stritzke et al., 2004). Thus, in an online environment, persons who normally exhibited characteristics of shyness were no different from those who are not shy. These findings support the notion that the text-based environment of computer mediated communication, as well as the lack of visual and auditory cues, reduces an individual's level of shyness.

In fact, recent research has indicated that computer mediated communication channels are both helpful and utilized by those who have high anxiety in face-to-face contexts. Kelly, Duran, and Zolten (2001) investigated motives for employing e-mail, and students preferred channel for communicating with faculty. They discovered that, while reticent and non-reticent students did not differ in the frequency of e-mail use, reticent students expressed a stronger preference than non-reticents for communicating with faculty via e-mail, and "reticent students employ e-mail because they perceive it as a more comfortable means of communicating" (Kelly et al., 2001, p. 175).

Based on such research, computer mediated communication is useful in its ability to shy individuals to satisfy the basic need of interacting with others. In finding ways to communicate with others online, computer mediated communication may offer shy individuals the ability to engage in a variety of social activities, establish and maintain relationships, and fill their interpersonal needs. Computer mediated communication successfully allows for interaction while diminishing the aspects of

face to face contexts that inhibit them from participating in the same behaviors in offline contexts.

### Computer Anxiety

When analyzing the role shyness plays in determining one's motives for instant messaging use, it is also necessary to evaluate other factors that could influence this choice. One such variable is computer anxiety, which is a fear or apprehension that is experienced by some individuals when using — or thinking about using — a computer. One's apprehension of using a computer has negative consequences as it may prevent the anxious individual from learning to use a computer. This lack of education may be detrimental to the individual, as computers are becoming more and more prominent in society. Many jobs now require basic computer literacy, and classroom education, beginning as early as elementary school and continuing well into higher education, is taking advantage of technological advances. While these individuals may be able to accomplish the same tasks by using a typewriter, pen and paper, books, or a card catalogue, as technology permeates our education and office environments, the highly computer apprehensive are struggling (DeLoughry, 1993).

Much of the current literature on computer apprehension explores how the amount of time one spends using a computer, and thus his or her experience level, affects computer anxiety. These studies indicate that, as one's level of experience with computers increases, the amount of anxiety over computer use decreases (Fariña, Arce, Sobral, & Carames, 1991; Lambert, Lewis, & Lenthall, 1989; Raub, 1981). Necessary and Parish (1996) report that, while college students with the least computer experience originally possessed the highest levels of anxiety, by increasing

the amount of time they use the computer each week, they could successfully reduce levels of computer apprehension. Other research suggests that one's level of computer apprehension is a predictor in how likely that individual is to use interactive communication technologies (Scott & Rockwell, 1997).

Other research, however, has found little or no significance between computer anxiety and experience (Marcoulides, 1988). Rockwell and Singleton (2002) found that while 91 percent of participants in the study reported they had prior experience with computers, there was still a distinct division between those with high computer apprehension and those with low computer apprehension. Thus, previous experience with computers did not affect computer anxiety.

The conflicting studies may be attributed to two causes. First, Reinsch (1985) suggests that individuals are apprehensive not toward the computer as a whole, but rather, toward performing specific tasks on a computer. Therefore, certain individuals may be apprehensive toward programming, while others may be anxious about using the Internet or engaging in computer-mediated communication. If, in fact, anxiety is caused by specific task performance, it is possible that previous studies overlooked this link. A second possible explanation is the user's attitude toward his or her apprehension. One's attitude toward computer anxiety may alter his or her perception of and ability to use computers (Spieir, Morris, & Briggs, 1995). Like any phobia, one's mindset affects his or her ability to overcome the anxiety. If the highly computer apprehensive individual has a positive attitude and believes he or she is capable of overcoming the phobia, this perception can lead to a self-fulfilling prophecy wherein the anxiety can be reduced. One means by which to reduce this anxiety would be continued computer experience. Finally, the studies may have failed to take the exact type of previous research into account. Gos (1996) argues

that the only experience some individuals have with computers is negative, such as poor grades in a class that used computers, little to no explicit instructions on how to use the computer, or unsuccessfully being able to complete complex tasks like programming. Type of experience is integral to research because, no matter the quantity of prior experience, if it is all negative, users will mostly likely still be apprehensive when using computers because they have not been successful the past.

Thus, those who will be most affected by computer apprehension are those who do not have prior experience with computers, those who have had negative experience with computers, and those who have a negative attitude about overcoming their anxiety. However, for those who engage in positive self-talk and are willing to put in the time and effort into learning, it is possible to lower computer apprehension. Research of this type is important because computer apprehension does not only affect one's ability to do well academically or in a business related situation. It is also significant to the communication field because those who are computer apprehensive may be disadvantaged in communication situations which occur through a computer-mediated environment.

### Writing Apprehension

In addition to computer anxiety, a second mediating variable influencing one's choice to partake in instant messaging programs is writing apprehension. Writing apprehension refers to "a person's general tendencies to approach or avoid situations perceived to demand writing accompanied by some amount of evaluation" (Daly, 1978, p. 10). A highly apprehensive individual finds writing unrewarding and will avoid situations where writing is seen as required and evaluative (Daly, 1978). It

is important to note that writing apprehension is not synonymous with below average writing ability. Writing apprehension is an anxiety of one's written work being valued, while writing ability has to do with one's vocabulary level and knowledge of grammatical and syntactical rules of writing. Research has shown a distinction between the two, as individuals with remedial writing abilities also have low levels of writing apprehension (Powers, Cook, & Meyer, 1979). Thus, apprehension is not equivalent to skill level, as even good writers may suffer from anxiety in relation to their writing.

Those who are highly apprehensive are significantly different than those who have lower levels of writing apprehension (Daly, 1978). For example, those who are highly apprehensive use significantly less intense language than their less apprehensive counterparts (Daly & Miller, 1975). In later research, Daly (1977) found highly apprehensive individuals write less, use fewer adverbs and commas, and use fewer words overall. Further research supported these findings, as in comparison to high apprehensives, those who scored low on writing apprehension write shorter paragraphs, use three times as many words, and twice as many paragraphs (Book, 1976). In addition to differences in the length of papers, the size of paragraphs, and the number of words used, high and low apprehensives also differ in their application of the writing process itself. Low apprehensives produce many drafts before arriving at a finished product, while high apprehensives engage in a more indirect and convoluted writing process (Hays, 1981). Further, highly apprehensive individuals are likely to procrastinate about writing their composition as long as possible; once they do start writing, they try to complete the task as quickly as possible (Bloom, 1980). On the other hand, low apprehensives begin the task



earlier, set aside large periods of time to complete and revise their writing, and accomplish more than their apprehensive counterparts (Bloom, 1980).

It is interesting to note is that high apprehensives write differently for compositions that will be evaluated as opposed to those that are private or anonymous. When writing for an audience or in an essay that is to be graded, those who are highly apprehensive use more independent clauses and modifiers than the same individuals do when writing in a journal (Hurlow, 1981). The underlying explanation for why the same individuals write differently depending on the audience may be due to the fact that those who are apprehensive about their writing create longer sentences and use jargon in an attempt to cover their insecurity (Aldrich, 1979).

As apprehension is a result of a fear — whether grounded or not — of being evaluated on one's writing, it is only necessary to conceal one's anxiety when he or she faces being evaluated. Further, the apprehensive individual must hold in high regard or at least have some level of respect for the person doing the evaluation. If the opinions of the person who is reading a composition are not held in high regard, people are less concerned with what is said. Richardson (1981) found that high apprehensives compose pieces that are syntactically more advanced when they write for a distant audience than they do when writing for a familiar one. Thus, the highly apprehensive individual may be less apprehensive, and thus produce better writing, when the work is left unevaluated or when it is read by a distant or an unesteemed audience.

Research has addressed the use of computers to reduce writing apprehension — especially in students who are writing in a language other than their own. After writing on a computer for a semester, apprehensive students who spoke



English as a second language (ESL) wrote longer papers and spent more time writing than students who did not use a computer (Phinney, 1988). In a later experiment, ESL students assigned to a computer group had lowered levels of apprehension after using the computer for writing while the control group did not (Phinney, 1991). These studies suggest that the computer is a useful tool for reducing some anxiety in apprehensive individuals.

Technology has become ever-present in aiding individuals with a variety of tasks, and is often used as a vehicle of instruction or supplemental learning. In the case of writing, the computer provides a way for individuals to analyze, review, edit, and improve compositions (Bean, 1983; Bradley, 1982), and computer use can improve the attitudes of users toward writing. Using a computer makes editing an easier and less tedious process (Dalton & Hannafin, 1987). The computer is an important and effective tool for increasing the amount of time high apprehensives spend on a writing task — and possibly reducing their anxiety in the process. As has been previously noted, high apprehensives are less anxious in contexts where the audience is distant and when a computer is employed as the writing tool.

In the case of instant messaging, nearly all communication takes place in the form of text messages, which obviously involves writing. However, the writing process takes place on a computer, which has been noted as a more comfortable channel for those who are apprehensive about writing. Typing messages through a text box gives the individual time to contemplate what was said and make any changes to the message, if desired. Further, the messages that are sent on instant messaging programs do not use the same style of grammar, diction, syntax, punctuation, and spelling that is expected in other forms of written communication, including letters, reports, and compositions. Marvin (1995) notes text-based

computer mediated communication is less formal than other forms of writing, and it has been termed a form of written speech. This is illustrated through the fact that online conversations are full of misspellings, incorrect punctuation and incomplete sentences. Incorporating typical speech patterns into text-based messaging, rather than formal writing, transforms static text into active text (Greller & Barnes, 1993). This change creates a more relaxed online atmosphere, wherein even apprehensive individuals may feel more comfortable. In fact, those who believe chatting is more akin to face-to-face conversations than proper written correspondence are more relaxed and less formal in their writing, as well as more forgiving about typos and improper — or nonexistent — punctuation (O'Conner & Kellerman, 2002). Furthermore, shortened words ('r' for are; 'u' for you) and acronyms ('brb' for be right back; 'ttyl' for talk to you later) are the norm in instant messaging (Grossman, 2004). As people of all levels of writing ability use such shortcuts, it is likely those who are highly writing apprehensive will feel more comfortable in this less formal online environment. The highly writing apprehensive will feel less out of place or fearful of being negatively evaluated in a context where the rules of writing have been tossed aside, and abbreviations, lowercase letters, no punctuation and frequent typos are expected.

#### Computer Mediated Communication vs. Face-to-Face Communication: The Debate

In order to analyze the uses and gratifications of instant messaging programs, as well as the interaction of one's levels of shyness, computer anxiety, and writing apprehension, it is necessary to understand the role computer mediated communication plays in communication research. There has been much debate in the field over whether computer mediated communication is a functional alternative

to face-to-face communication, and even if computer mediated communication is worthy of being studied in an interpersonal sense (e.g., Flaherty, Pearce, & Rubin, 1998; Perse & Courtright, 1993). On one side, critics of computer mediated communication believe it is impersonal, hostile, and shallow. On the other side of the debate are those who believe computer mediated communication is a significant form of interpersonal communication.

Research has shown that computer-mediated groups have a more difficult time identifying and moving toward shared points of view than do face-to-face groups (Kiesler & Sproull, 1992). However, later research found that content was actually higher when computer mediated communication groups were not restricted by time (Walther, Anderson & Park, 1994). Thus, it is not that computer mediated communication is incapable of expressing relational information. Rather, computer mediated communication may just take a longer period of time to accomplish this task. Early studies on computer mediated communication were also laboratory-based (Garton & Wellman, 1995). The context of this research may have affected the findings that computer mediated communication is impersonal and ineffective because of the very way it was designed; laboratory conditions do not necessarily reflect real life and the natural way computer mediated communication relationships progress.

Critics of computer mediated communication do not think real relationships or communities can be formed online – only illusions of them can be formed (Beninger, 1987). Yet, Papacharissi and Rubin (2000) note that technology has been shown to “possess both interactive/social and informational/task-oriented dimensions for users. In this respect, the needs the Internet fulfills may not be too different from the needs met by more traditional interpersonal and media channels” (p. 179). Certainly,

common experience would suggest that computer mediated communication is a form of interpersonal communication as many individuals use e-mail, instant messaging, and other forms of computer mediated communication to keep in touch with friends and family, as well as communicate with colleagues and even acquaintances. Studies also show that users socialize, maintain relationships, play games, and receive emotional support through mediated channels (Feldman, 1987; Finhold & Sproull, 1990; Haythornthwaite, Wellman & Mantei, 1994; McCormick & McCormick, 1992). Thus, research suggests that computer mediated communication is a means through which to establish interpersonal interaction as well as a way to maintain, extend, and enhance current interpersonal relationships (Cathcart & Gumpert, 1985).

There is also debate over whether computer mediated communication makes communication exchanges more difficult than in face-to-face interactions. Computer mediated communication is thought to have a reduction in contextual, visual, and aural cues that make effective communication difficult and impersonal (Rice, 1987). However, these difficulties can be compensated for and overcome. Most notably, computer mediated communication takes place nearly solely through text messages, which lack nonverbal cues (Kiesler, Zubrow, Moses & Geller, 1985). Often, it is hard to distinguish one's tone or emotional state through text. For example, if one individual asked another for a favor and received the response 'Sure,' it is difficult to tell if it was an enthusiastic, apathetic, or aversive response. However, users of computer mediated communication have been able to surmount this shortcoming. The use of emoticons, or relational icons, supplements text messages by conveying happiness [:)], sadness [:(], or surprise [:o] (Krol, 1994). The only limit to the use of emoticons is the degree to which both participants in the conversation understand what the relational icons mean. To help create consistent icons, current instant

messaging programs offer graphical smiley faces, which can be inserted with text messages to express sadness, happiness, surprise, affection, and embarrassment, among other emotions.

The longer users interact over computer mediated communication, the more likely they are to adapt their language and writing style to increase immediacy and manage their relationships (Walther, 1992). In addition to finding a way to express emotions, frequent computer mediated communication users have adopted a paralanguage and jargon to augment other nonverbal shortcomings. Computer mediated communication abbreviations (e.g., lol for laughing out loud; jk for just kidding; brb for be right back), improper grammar and punctuation (e.g. "r u going 2 the movie l8r" instead of "Are you going to the movie later?"), and spatial arrangements are counted among these techniques, as is using all capital letters to simulate anger or yelling (e.g. "WHY DID YOU DO THAT?").

Interestingly, the lack of nonverbal communication cues may be beneficial in some instance, as computer mediated communication filters out demographic and socioeconomic information that could, in a face-to-face situation, hinder effective and appropriate communication (Finholt, Sproull & Kiesler, 1990). While the filtering process only works if users have never met before (as otherwise individuals may already know about each other's age, sex, and social status), computer mediated communication offers users a sort of anonymity for those who may be made uncomfortable or unsure of themselves when faced with these cues in a face-to-face interaction.

Critics also claim computer mediated communication easily affords opportunities to manipulate one's identity (Lea & Spears, 1995; Myers, 1987). However, while there will always be individuals who take advantage of such features

of technology, the anonymity offered by computer mediated communication brings a positive side. An electronic setting may provide more opportunities for relationships as well as less fear of evaluation than is the case in face-to-face settings (Sproull & Kiesler, 1991). Thus, certain individuals who are apprehensive or fear evaluation – communication apprehensives or shy individuals – may benefit from participating in online interactions. Further, partaking in computer mediated communication is akin to an “identity workshop,” where users learn and test social skills (Bruckman, 1992). Thus, computer mediated communication may improve social and communication skills as well as give confidence to those individuals who are insecure or apprehensive. In fact, some users have reported that online interaction has allowed them to overcome their shyness in face-to-face scenarios (Myers, 1987).

In addition to merely overcoming obstacles that may make computer mediated communication appear to be inferior to face-to-face, computer mediated communication has also been able to illustrate its equivalence in other dimensions. computer mediated communication is not intrinsically more depersonalized than face-to-face communication; rather, patterns of interaction are similar in computer mediated communication and face-to-face (Straus, 1997). For example, face-to-face groups do not express greater intimacy than computer-mediated groups (Walther, 1995). Walther (1996) concluded that computer mediated communication is rarely impersonal, computer mediated communication is interpersonal when individuals are able to invest the time and effort to interact relationally, and computer mediated communication is hyperpersonal when users can manage relationships and impressions more effectively through computer mediated communication than they could in face-to-face communication. Further, Parks and Floyd (1996) found that

those who post messages and engage in computer mediated communication more often had more personal relationships than those who posted less often.

### Computer Mediated Communication as a Functional Alternative

Computer mediated communication is important to this study because of the possibility that instant messaging programs may be a viable functional alternative for shy individuals. Two media are functional alternatives if they fulfill the same need(s) equally; however, if media serve different needs, they are considered specialized (Katz, Gurevitch, & Haas, 1973). If two media are functional alternatives, they may substitute for each other while fulfilling the same need for an individual. For example, if face-to-face communication and computer mediated communication were functional alternatives, one who is highly shy in face-to-face situations could engage in computer mediated communication in order to satisfy his or her needs.

In examining the relationships between motives for using computer mediated communication and face-to-face communication, Flaherty, Pearce, and Rubin (1998) found that the two channels are not functional alternatives. However, methodological and conceptual limitations in this study should be noted, as they restrict its generalizability. The Flaherty et al (1998) study used the computer mediated communication apprehension scale "as an appropriate measure of apprehension because of its significant and positive correlation with the PRCA-24" (p. 265). However, studies have shown that the relationship between computer anxiety and computer mediated communication apprehension is inconclusive, or at best, very weak (Carlson & Wright, 1993; Scott & Rockwell, 1997). Carlson & Wright (1993) demonstrated the correlation between computer anxiety and computer mediated communication apprehension to be .22. Similarly, Scott and Rockwell (1997)



reported a correlation between computer anxiety and computer mediated communication apprehension as only .14, and noted that the negative correlations between computer anxiety and computer mediated communication apprehension use were also low (-.04 to -0.24). These findings argue that being anxious about using a computer is not the same thing as being apprehensive about using the computer as a medium through which to communicate. Thus, while computer anxiety and computer mediated communication apprehension may be related, they are only minimally so. Studies such as Flaherty, Pearce, and Rubin (1998), that indicate that computer mediated communication is not a functional alternative to face-to-face should be interpreted cautiously. While computer mediated communication may not be a functional alternative for those who are apprehensive about computers, it is possible it *is* a functional alternative for those who are apprehensive or anxious in oral and social communication settings.

Based on previous research findings, it is possible that those who are highly shy can use computer mediated communication as a tool for reducing anxiety felt in, and possibly as an alternative to, face-to-face settings. In fact, research has illustrated that the computer-mediated environment is an ideal one for shy individuals because it allows them to feel greater perceived control over the communication process (Carduci & Zimbardo, 1995). For example, in the online environment, individuals are less restricted by time constraints, as there is no immediate pressure to respond to a communicative encounter. While a question posed in a face-to-face setting must be responded to nearly instantaneously, one may take seconds, minutes, or even hours to reply to the same utterance online. The addition of time, and absence of pressure may give shy individuals a chance to collect their thoughts and a feeling that the "ball is in their court," so they are empowered in the



communication setting, rather than put on the spot. Further, lack of face-to-face cues may reduce the fear of rejection, or at least permit the shy individual to save face if rejection should occur. Rather than feeling humiliation at the perception of being rejected in a public arena, they are able to deal with the fear or embarrassment of rejection using the computer screen as a buffer zone.

Research has shown that reduced cues and lack of direct nonverbal communication depersonalizes computer mediated communication (Kiesler, Siegel, & McGuire, 1984; Sproull & Kiesler, 1986). Depersonalization could be beneficial to highly shy individuals, prompting them to become less self aware and more open, and communicate more effectively. The anonymity offered through online communication gives shy individuals an environment that is safe and secure for social interaction (Young, Griffin-Shelley, & Cooper, 2000). Computer mediated communication can further provide shy individuals an outlet for communication because “in the Internet, no one knows you’re an introvert” (Amichai-Hamburger, Wainapel, & Fox, 2002, p.126). In other words, the virtual environment afforded by the Internet offers shy individuals freedom from the inhibitions and anxiety they experience in face-to-face settings. In allowing shy individuals to keep their introversion a secret, or at least move it from the limelight, the online environment allows people the opportunity to create alternate identities, allowing them to improve upon themselves in areas they do not like, while accentuating their best characteristics (Turkle, 1995).

A multitude of findings have suggested computer mediated communication benefits those who are either shy or highly communication apprehensive. These results suggest that those who are uncomfortable in social or face-to-face settings are able to turn effectively to computer mediated communication channels for

communication. While using computer mediated communication channels, shy individuals are no different from nonshy individuals (Kelly et al., 2001; Roberts et al., 2000; Stritzke, et al., 2004). Other research argues that shy individuals are less inhibited in text-based virtual environments than in face-to-face settings, which enabled them to develop online relationships that would have been difficult or impossible to cultivate offline (Roberts, et. al, 2000). This suggests, that at least for shy individuals, computer mediated communication is a means to overcome barriers that are erected in face-to-face communication, and computer mediated communication can be effectively used instead of, and as an alternative to, face-to-face communication. If this is the case, computer mediated communication should be explored for its positive benefits and as a feasible way to overcome shyness and serve as a functional alternative to anxiety-ridden face-to-face communication situations.

### Research Questions and Hypotheses

This study aims to discover if those with different levels of shyness have different interpersonal communication motives in regard to instant messaging programs. The variables of writing apprehension and computer anxiety will also be examined, as instant messaging takes place in a text-based online setting through a computer. As such, these variables may act as covariates and play an intermediating role in determining who chooses to use instant messaging programs and for what reasons. Kuehn (1994) examined motives of computer mediated communication users in an instructional setting, while Papacharissa and Rubin (2000) considered the uses and gratifications of the Internet. The present study expands on the former research by expanding uses and gratifications to instant

messaging programs. With these distinctions in mind, the following research question and hypotheses are offered:

RQ1: What are the reasons people use instant messaging programs?

H1: Level of shyness influences one's motives for using instant messaging programs.

H2: Highly shy individuals communicate with groups of people (ie. acquaintances, friends, etc) via instant messaging programs at different rates than their less shy counterparts.

H3: The relationship between shyness and computer apprehension will affect instant messaging usage. Those who are less shy and have low computer apprehension will use instant messaging programs most, followed by those who are more shy-low computer apprehension, less shy-high computer apprehension, and finally more shy-high computer apprehension.

## CHAPTER 2

### METHOD

#### Participants

Data were obtained in September 2005 from a convenience sample of 402 students (158 male and 244 female) with a mean age of 19.236 years ( $SD=1.368$ ) from a Midwestern University. Subjects were gathered as they responded to announcements in class or e-mails inviting them to participate in the survey. Students from all sections of two entry-level communication courses (CMM 110 and CMM 202) were officially made aware of the study. Some professors in these entry-level courses offered students a nominal amount of extra credit points if they participated in the study; they were asked to print out the survey confirmation sheet as proof of participation. CMM 110 was selected because it is a general education course that is required of all students in order to graduate. In an attempt to achieve a broad sample of college students, subjects could be recruited from all divisions of this University based on this requirement.

In terms of ethnic background, 2.5 percent of subjects were African-American, 1.2 percent Asian, 91.5 percent Caucasian, 2.2 Hispanic, and 2.5 other. The ethnic make up of this sample mirrors the student body of the university from which the sample was drawn, where 3.3 percent of students are African-American, 1.1 percent are Asian, 91.8 are Caucasian, 2.3 percent are Hispanic, and 1.6 are other. In terms of academic area, 44.3 percent of subjects were majoring in arts, 10.1 in engineering, 22.8 percent in business, 10.6 in education and allied

professions, and 12.2 percent in sciences. While this was a convenience sample, the academic profile of students is similar to the population of the university, where 37.2 percent of students major in arts, 15.7 in engineering, 21.3 percent in business, 14.6 in education and allied professions, and 11.1 percent in sciences. As such, the sample appears to be representative of the university population in terms of race, age, and major.

Because modern colleges and universities have become high-tech, emphasizing technology and connectedness, all students at the university from which the sample was obtained are required to purchase a notebook computer and have constant access to high-speed Internet — both regularly and wirelessly. As such, all students may choose to be continuously connected to the Internet and have instant messaging programs enabled all the time.

### Instrumentation

An 83-item Web-based survey (See Appendix A) was developed to measure the constructs of interpersonal communication motives, shyness, computer apprehension, and writing apprehension, as well as demographic information. This questionnaire was divided into four sections.

Section 1: Interpersonal Communication Motives. The Interpersonal Communication Motives scale measures reasons for which individuals choose to communicate (See Appendix B). The scale measures six prominent motives: pleasure, affection, inclusion, escape, relaxation, and control (Rubin et al., 1988). Each of the 28 items offers five Likert responses, which range from strongly disagree to strongly agree. The original offline versions of this scale had high internal consistencies, with Cronbach's alphas ranging from .75 to .89 (Rubin et al., 1988).

Further, this scale has been noted to have face and convergent validity as it is related to communication apprehension and outcome of communication satisfaction (Rockwell & Singleton, 2002; Rubin et al., 1988). Communication apprehension was inversely related to pleasure, affection, and control and positively related to inclusion, while communication satisfaction was positively related to pleasure, affection, inclusion, and relaxation (Rubin et al., 1988).

The original scale was adapted for use on motives for using instant messaging as a means for interpersonal communication. The original prefix “I talk...” was changed to “I talk on instant messaging programs.” This alteration makes it is possible to analyze the subject’s motives for using instant messaging programs as their channel for interpersonal communication. Pilot testing confirmed that participants found these directions easy to understand and successfully responded to each statement based on their motives for using instant messaging programs. A varimax rotated factor analysis showed 7 factors, not the 6 found in the offline study. However, upon further analysis, no items loaded under the seventh factor when using the 60-40 rule. Thus, this stray factor may be ignored, leaving the six factors found by Rubin et al. (1988). A varimax rotated factor analysis showed 6 factors, which is the same number found the offline study (Rubin et al., 1988). While three items did not meet the 60-40 rule, this may be attributed to the fact that the sample was nonrandom or the sample size was considerably smaller than the 504 used in the Rubin et al. (1988) study.

Section 2: Communication Style. This portion of the survey measured subjects’ levels of shyness, computer apprehension, and writing apprehension. This section of the survey rotated questions from each measure, as opposed to doing a block of all shyness questions, followed by all computer apprehension questions, and

finally writing apprehension items. The purpose of intermingling the questions was to reduce the probability of subjects quickly reading through related questions or getting bored from reading questions all on the same topic.

Shyness was operationalized by the 13-item Revised Cheek and Buss Shyness Scale [RCBSS]. Each of the items offers five Likert responses, which range from strongly disagree to strongly agree (See Appendix C). The higher one's score on the RCBSS, the more shy an individual is. The offline RCBSS has high internal consistency, with a Cronbach's alpha level of .82 (Jones, Briggs & Smith, 1986) and a test-retest reliability of .89 (Class & Arnkoff, 1989, 1981), as well as face validity and adequate convergent validity (Jones et al., 1986).

Computer apprehension was measured by the 10-item Computer Anxiety scale (See Appendix D). This scale asks questions about a subject's confidence level in currently using a computer as well as his or her ability to learn to use it in the future. Each of the items offers five Likert responses, which range from strongly disagree to strongly agree. Previous research put the internal consistency of the Computer Anxiety scale around .87 (Ray et al., 1990).

The writing apprehension test consists of 20 statements regarding one's enjoyment in writing and confidence in his or her ability to write competently (See Appendix E). Each of the items offers five Likert responses, which range from strongly disagree to strongly agree.

Section 3: Instant Messaging Use. This section of the survey consisted of six items assessing subjects' use of instant messaging (See Appendix A). The first three questions asked how long the respondent actively engaged in instant messaging on the previous day; whether or not yesterday's use was typical; and if not, what typical use was. The next question asked how long the subject had used

instant messaging programs. This measure will help determine if there is a difference between novice and experienced users. The following question involved eight sub questions, and asked how often the subject communicated with various types of people (acquaintances, co-workers, family, friends from home, friends from school, peers, people they never met in person, and teachers/professors) via instant messaging. The seventh question asked subjects how often they engaged in various behaviors (watching television/movies, listening to music, talking on the phone, talking to others in the same room, reading for pleasure, reading for school, writing papers/completing homework) while simultaneously using instant messaging programs. The final question in this section was an open ended response, in which subjects were asked to list any activities that were not listed in the previous question that they engaged in while using instant messaging programs.

Section 4: Respondent Demographics. The final section consisted of four items assessing the respondent's demographics: gender, race, age, year in school, and major – if in college (See Appendix A).

### Procedure

Participants in this study were recruited in a variety of ways. Students in two entry-level communication classes were made aware of the survey through e-mail from their professors. The link the subjects received directed them to a Web site survey, which was designed to be a self-administered instrument requiring between 10 and 20 minutes to complete. Once at the Web site, participants had to read an informed consent form and click "I agree to participate" in order to complete the survey and have their results be collected. Participants were instructed that their responses would remain completely anonymous. A definition of instant messaging



was given, along with common instant messaging programs. For each section of the survey, participants were given explicit instructions regarding the purpose of the section, and they were encouraged to select the response from the Likert scale that best described themselves. To submit the survey, the participant needed to have consented to participate, completed all items, and clicked “Submit” to initiate automatic recording of their survey responses into a plain-text data file (.csv). Csv stands for comma separated values, meaning that the data delimiter is the comma. After submitting the survey, individuals were thanked for participating in the study and were again given the researcher’s contact information in case they had questions, concerns, or were interested in the results of the study.

### Data analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Responses were collected from the Web based survey and screened for authenticity. All fields were analyzed to make sure there are no unusual values (ie. 200 years old in an age field or a value of 8 for Likert scale ranging from 1 to 5). Each communication style component (shyness, writing apprehension, and computer anxiety) was summed to determine every individual's level of shyness, writing apprehension, and computer anxiety. These categories were split into three groups: high, medium, and low.

To determine what motives people have for using instant messaging, the individual frequencies were tallied for every item on the ICM, and the items were grouped into their respective categories (pleasure, affection, inclusion, escape, relaxation, and control). The means, standard deviations, and number of responses for each Likert response (strongly disagree, disagree, neutral, agree, strongly agree)

were also tallied. The number of people who agreed and strongly agreed were summed, resulting in the number of people who use instant messaging for each motive. Analysis of the items in each category determined the overall mean, standard deviation, total number of agree and strongly disagree responses, and percentage of the respondents using instant messaging for each motive.

A partial correlation was used to test hypotheses 1 and determine if one's level of shyness has an effect on the motives an individual has for using instant messaging programs and if shyness levels are related to time spent using instant messaging, respectively. The partial correlation was used because it allows for study of continuous data, as well as the ability to control for writing apprehension and computer anxiety, which may be covariates. Shyness levels were left in their raw form, rather than categorizing them into levels (e.g. low, moderate, high) because categories requiring drawing a line between data between levels, when there may not be much difference between someone who is at the upper end of the 'low' category and someone who is at the bottom of the 'moderate' category. Partial correlation significance of  $p < .05$  was accepted.

Hypothesis 2 suggests shy and nonshy individuals talk to categories of people (acquaintances, coworkers, etc.) at different rates. The questions pertaining to this hypothesis used a Likert scale and allowed subjects to rank how often they talked to various groups of people (never, rarely, sometimes, often, all the time). To assess this set of data, a one-way ANOVA was used to compare levels of shyness to frequency of instant messaging use to particular groups. A significance of  $p < .05$  was accepted. If the one-way ANOVA was found significant, Tukey's HSD was run to determine where the significance lies. If Tukey's HSD proved to be significant

(again,  $p < .05$  will be accepted), an independent t-test was run to determine the exact amount of difference between the groups.

To test hypothesis 3, which examines how the relationship between shyness and computer mediated computer apprehension will affect instant messaging use, analysis of covariance (ANCOVA) was used. ANCOVA controlled for writing apprehension and computer anxiety in order to see what impact shyness has on the amount of time spent on instant messaging programs. Additionally, a multiple regression was used to consider how shyness, writing apprehension, and computer anxiety affect time spent on instant messaging programs. The eta value from the multiple regression displays the variance attributed to each predisposition.

## CHAPTER 3

### RESULTS

The analysis for the current study was conducted in several steps. Part 1 involved screening the data to ensure all surveys were valid and submitted by unique participants. In part 2, the interpersonal communication motives scale was examined by itself. Part 3 investigated the three hypotheses, by analyzing whether shyness affects the motives individuals have for using instant messaging; whether shyness determines with whom individuals communicate; and whether the relationship between shyness and computer apprehension affects instant messaging use.

#### Data Screening and Validity Checks

A total of 422 responses were collected in the Web survey. Initial data screening for unusual values resulted in the removal of one data point due to invalid age entry. Five additional surveys were removed due to invalid entry for time spent online. Further validity checks ensured there were not multiple responses by one individual. This was done by conducting a frequency analysis using remote host and timestamp information that was recorded for each entry with the survey data. If two or more identical remote host addresses occurred, timestamps were analyzed. If the time lapse was greater than or equal to 15 minutes, entries were retained as separate entries, as two individuals could have completed the survey on a shared terminal (e.g. at a computer lab or library). However, if the time lapse was less than 15 minutes, the data for both entries were analyzed. If the data were identical, the second entry was discarded and the first entry retained, as the respondent probably

submitted the survey multiple times. However, if the data for the two entries were different, both entries were deleted. These validity checks of multiple responses resulted in fourteen entries being discarded, leaving 402 valid entries.

Precursory analysis of the data looked at the results of the RCCBS, Writing Apprehension Test, and Computer Anxiety Scale. The average score on the RCCBS was 31.52, which is comparable to the 32.85 average found in other studies (Jones, et al., 1986). Further analysis of the data showed that men were more likely to be highly shy than women. These data suggest the mean level of shyness for men was 32.89 while the average shyness for women was 31.63. These findings are consistent with previous research that show the mean shyness is 33.3 for men and 32.4 for women (Jones, et al., 1986). Cronbach's alpha for shyness in this study was .874. The mean for writing apprehension was 53.98 (sd = 13.57), which is comparable to other studies (McCroskey, et al., 2004). Cronbach's alpha for computer apprehension in this study was .870. The mean for computer anxiety was 37.67 (sd = 6.44). Scale reliability for this item had a Cronbach's alpha of .932.

*RQ1: What are the reasons people use instant messaging programs?*

Factor analysis was used to examine the dimensionality of the twenty-eight item interpersonal communication motives scale. A principal components solution with varimax rotation was employed. Factors with an eigenvalue of 1.0 or greater were selected for extraction and rotation. The criteria for including items on a factor were that (1) items loading at .60 or higher on one factor, (2) secondary loadings less than .40 and (3) a factor must contain at least three items to be considered a factor. The items loaded on six dimensions, and the distribution of items corresponded to

the findings of Rubin et. al (1988). All but one factor ("Item 20: Because I have nothing better to do") loaded properly and met the 60-40 test. A second factor analysis without the item showed the other twenty-seven items loaded under the proper factors and met the other requirements of the test. Item 20 was discarded from further analysis. The measure was found to be reliable, with an overall alpha of .907 (pleasure = .874; affection = .803; inclusion = .762; escape = .772; relaxation = .808; control = .630). Only the control factor showed questionable reliability.

To determine what motives people have for using instant messaging, the individual frequencies were tallied for each ICM item. Then, the items were grouped into their respective dimensions (pleasure, affection, inclusion, escape, relaxation, and control). The means, standard deviations, and number of responses for each Likert option (strongly disagree, disagree, neutral, agree, strongly agree) were tallied. The number of people who either agreed or strongly agreed were summed to find the total number of people who state they use instant messaging for each motive. This number was turned into a percentage based on the total number of respondents. An average was then taken of all the items in a category to determine the overall mean, standard deviation, total number of agree and strongly agree responses, and percentage of the respondents using instant messaging for each motive.

This analysis found 57.7% of individuals use instant messaging for pleasure ( $m=3.42$ ,  $sd=0.66$ ), 59.2% use it for affection ( $m=3.44$ ,  $sd=0.70$ ), 55.0% use it for inclusion ( $m=3.29$ ,  $sd=0.20$ ), 79.2% use it for escape ( $m=3.94$ ,  $sd=0.76$ ), 57.0% use it for relaxation ( $m=3.41$ ,  $sd=0.78$ ), and 40.9% use it for control ( $m=3.01$ ,  $sd=0.77$ ). As such, nearly all subjects use instant messaging for escape while less than half use it for control. The frequency, means, standard deviations, and percentages for each interpersonal motive are shown in Table 1.

Table 1

Frequency of agrees and strongly agrees for interpersonal communication motives

Pleasure				
Item	Mean	S.D.	# of agrees	% of agrees
1	4.04	0.79	349	86.8
4	3.24	1.00	194	48.3
7	3.64	0.89	270	67.1
10	2.61	0.95	79	19.7
13	3.03	0.99	154	38.3
16	3.81	0.82	322	80.1
19	3.98	0.77	342	85.1
22	3.04	0.96	146	36.3
<b>total</b>	<b>3.42</b>	<b>0.66</b>	<b>1856</b>	<b>57.7</b>

Affection				
Item	Mean	S.D.	# of agrees	% of agrees
2	3.42	0.93	231	57.5
9	3.42	1.01	236	58.7
15	3.51	0.88	257	63.9
17	3.49	0.91	236	58.7
24	3.38	0.92	230	57.2
<b>total</b>	<b>3.44</b>	<b>0.70</b>	<b>1190</b>	<b>59.2</b>

Inclusion				
Item	Mean	S.D.	# of agrees	% of agrees
3	3.33	1.08	224	55.7
11	3.46	0.99	257	63.9
18	3.05	1.11	177	44.0
25	3.33	0.99	226	56.2
<b>total</b>	<b>3.29</b>	<b>0.80</b>	<b>884</b>	<b>55.0</b>

Escape				
Item	Mean	S.D.	# of agrees	% of agrees
5	4.11	0.96	331	82.3
12	4.08	0.79	353	87.1
26	3.63	0.97	274	68.2
<b>total</b>	<b>3.94</b>	<b>0.76</b>	<b>958</b>	<b>79.2</b>

(Table 1 continues)

Table 1 (continued)

Frequency of agrees and strongly agrees for interpersonal communication motives

Relaxation				
Item	Mean	S.D.	# of agrees	% of agrees
3	3.32	1.00	204	50.7
11	3.57	0.95	269	66.9
18	3.46	0.98	240	59.7
25	3.29	0.98	203	50.5
total	3.41	0.78	916	57.0

Control				
Item	Mean	S.D.	# of agrees	% of agrees
8	3.28	1.02	211	53.5
23	2.83	1.02	136	33.8
28	2.93	1.01	142	35.3
total	3.01	0.77	489	40.9



*H1: Level of shyness influences one's motives for using instant messaging programs.*

The data collected concerning participants' motives for using instant messaging programs were transformed in order to formulate one score for each motive. Higher scores indicated a tendency to use instant messaging programs to fulfill that motive. These composite scores were then used to determine whether one's level of shyness is related to each motive. One's level of shyness was determined by calculating a total shyness score from the RCBSS. Higher numbers indicate higher levels of shyness.

A correlation was used because this test allowed for analysis at a continuous level of data. Based on the correlations, hypothesis 1 was partially supported as there is a positive relationship between shyness and affection ( $N=402$ ,  $r=0.11$ ,  $p<.05$ ), as well as shyness and inclusion ( $N=402$ ,  $r=0.28$ ,  $p<.01$ ). No significant relationship is found between shyness and pleasure ( $N=402$ ,  $r=0.02$ , n.s.), escape ( $N=402$ ,  $r=0.07$ , n.s.), relaxation ( $N=402$ ,  $r=0.08$ , n.s.) or control ( $N=402$ ,  $r=0.05$ , n.s.).

To make sure that other variables were not responsible for the significant relationship between shyness and interpersonal communication motives, partial correlations were employed. After controlling for computer apprehension and computer anxiety, hypothesis 1 was again partially supported. There is a positive relationship between shyness and affection ( $N=402$ ,  $r=0.11$ ,  $p<.05$ ), as well as shyness and inclusion ( $N=402$ ,  $r=0.28$ ,  $p<.01$ ). No significant relationship is found between shyness and pleasure ( $N=402$ ,  $r=0.02$ , n.s.), escape ( $N=402$ ,  $r=0.06$ , n.s.), relaxation ( $N=402$ ,  $r=0.09$ , n.s.) or control ( $N=402$ ,  $r=0.00$ , n.s.). An assessment of each interpersonal communication motive is shown in Table 2.

Table 2

Assessments of interpersonal communication motives by level of shyness

<b>Interpersonal motive</b>	<b>M</b>	<b>SD</b>	<b>n</b>	<b>r</b>
Pleasure	3.42	0.66	402	0.02
Affection	3.44	0.70	402	0.11**
Inclusion	3.29	0.80	402	0.28*
Escape	3.94	0.76	402	0.06
Relaxation	3.41	0.78	402	0.09
Control	3.01	0.77	402	0.00

Note: All means based on a 5-point scale. All correlations control for writing apprehension and computer anxiety.

\* $p < .01$

\*\* $p < .05$

*H2: Highly shy individuals communicate with groups of people (acquaintances, friends, etc.) via instant messaging programs at different rates than their less shy counterparts.*

To determine if there is a relationship between one's level of shyness and with whom he or she communicates via instant messaging programs, shyness must first be categorized into categories so a one-way ANOVA can be used to analyze the data. One's level of shyness was determined by calculating a total shyness score from the RCBSS. Higher numbers indicate higher levels of shyness. Based on these scores, three categories of shyness — high-, moderate- and low-shyness — were computed. Low shyness was categorized by a score of 27 or less ( $n=139$ ), moderate shyness was 28 to 34 ( $n=124$ ), and high shyness was a score of 35 or higher ( $n=130$ ).

Hypothesis 2 was partially supported. People of different levels of shyness talk to coworkers at different rates ( $F=4.606$ ,  $df=2/399$ ,  $p<.05$ ). Tukey's HSD indicates less shy and highly shy individuals talk to coworkers at different rates. Specifically, the independent sample t-test suggests that less shy individuals talk to co-workers at a rate of 2.55 on a Likert scale while highly shy individuals talk to them at a rate of 2.17 ( $t=2.783$ ,  $df=266.136$ ,  $p<0.01$ ). Tukey's HSD also indicated that moderately shy and highly shy individuals talk to coworkers at different rates. The independent sample t-test suggests that moderately shy individuals talk to coworkers at a rate of 2.53 on a Likert scale while highly shy individuals talk to them at a rate of 2.17 ( $t=2.064$ ,  $df=258.491$ ,  $p<.01$ ).

People of different levels of shyness talk to friends from school at different rates ( $F=6.962$ ,  $df=2/399$ ,  $p<.01$ ). Tukey's HSD indicates less shy and highly shy individuals talk to friends from school at different rates. Specifically, the independent sample t-test suggests that less shy individuals talk to friends from school at a rate of

4.58 on a Likert scale while high shy individuals talk to them at a rate of 4.25 ( $t=3.381$ ,  $df=253.812$ ,  $p<0.01$ ). Tukey's HSD also indicated that moderately shy and highly shy individuals talk to friends from school at different rates. The independent sample t-test suggests that moderately shy individuals talk to friends from school at a rate of 4.55 on a Likert scale while highly shy individuals talk to them at a rate of 4.25 ( $t=2.951$ ,  $df=261$ ,  $p<0.01$ ).

People of different levels of shyness talk to peers at different rates ( $F=4.853$ ,  $df=2/399$ ,  $p<0.01$ ). Tukey's HSD indicates less shy and highly shy individuals talk to peers at different rates. Specifically, the independent sample t-test suggests that less shy individuals talk to peers at a rate of 4.09 on a Likert scale while high shy individuals talk to them at a rate of 3.73 ( $t=3.152$ ,  $df=267$ ,  $p<0.01$ ).

Individuals of different levels of shyness use instant messaging programs to chat with people they have never met in person at different rates ( $F=5.837$ ,  $df=2/399$ ,  $p<0.01$ ). Tukey's HSD indicates that low shy and highly shy individuals talk to people they have never met in person at different rates. Specifically, the independent sample t-test suggest less shy individuals talk with people they have never met in person at a rate of 1.62 on a Likert scale, while highly shy individuals talk to them at a rate of 2.00 ( $t=-3.343$ ,  $df=237.233$ ,  $p<0.01$ ).

Shyness was not found to be a significant predictor of who individuals communicate with using instant messaging programs in the following relationship categories: acquaintances ( $F=2.390$ ,  $df=2/399$ , n.s.), family ( $F=0.713$ ,  $df=2/399$ , n.s.), or friends from home ( $F=2.554$ ,  $df=2/399$ , n.s.).

*H3: The relationship between shyness and computer apprehension will affect instant messaging usage. Those who are less shy and have low computer apprehension will use instant messaging programs most, followed by those who are more shy-low computer apprehension, less shy-high computer apprehension, and finally more shy-high computer apprehension.*

Hypothesis 3 examined whether the relationship between communication predispositions will affect instant messaging use. A multiple regression revealed that the combination of shyness, computer apprehension, and writing apprehension did not serve as a significant predictor of time spent online ( $F=1.842$ ,  $df=3/398$ , n.s.).

In an effort to better understand the results from the multiple regression, partial correlations were employed in post hoc tests. Each independent variable was individually correlated with the amount of time subjects spend online, while controlling for the other two variables. For example, the relationship between shyness and time spent online was analyzed after controlling for computer anxiety and writing apprehension. After controlling for the affects of the other independent variables, the data show that the length of time one spends using instant messaging programs is not related to shyness ( $df=398$ ,  $r=.018$ , n.s.), computer anxiety ( $df=398$ ,  $r=.011$ , n.s.) or writing apprehension ( $df=398$ ,  $r=.109$ , n.s.).

As the results suggest that time spent online is not a significant predictor of how communicative predispositions influence one's choice to use instant messaging programs, a post hoc test was conducted to analyze the relationship between one's level of shyness and the length of time, in years, that he or she has been using instant messaging. After controlling for writing apprehension and computer anxiety, a partial correlation found that shyness is negatively related to the experience that one has using instant messaging programs ( $df=398$ ,  $r=-.125$ ,  $p<.05$ ). It appears that shyness may affect the initial rate of adopting instant messaging, but it does not affect the amount of time spent using the programs after adoption.

## CHAPTER 4

### DISCUSSION

The aim of this study was to identify the motivations for instant messaging use as well as compare individuals on a variety of communicative traits, including shyness, writing apprehension, and computer anxiety, in an online interpersonal context. This analysis sought to extend research on computer mediated communication beyond an isolated variable framework to a more thorough and encompassing uses and gratifications paradigm. This study sought to examine the relationships between one's instant messaging use, motivations, and communicative traits.

To investigate research question 1, the current study adapted Rubin et al's (1988) interpersonal communication motives scale from use in face-to-face interpersonal communication to synchronous online interpersonal communication use. The first analysis found people use instant messaging as a medium for interpersonal communication for pleasure, to express affection, to seek inclusion, to escape from other activities, to relax, and to express control. These results confirm the findings of previous studies that found individuals have uses for interpersonal communication (Rubin et al., 1988; Schutz, 1966), specific motivations for using a medium (Rubin, 1983; Rubin et al., 1985), and that the motivations are related to one's communicative traits (Martin et al., 2002).

A factor analysis showed the motives for instant messaging loaded on the same six factors (pleasure, affection, inclusion, relaxation, escape, and control) as

did the motivations for interpersonal, face-to-face communication. These results suggest that people use instant messenger to fulfill the same needs as they do while communicating face-to-face. As would be expected with an interpersonal communication orientation, the motives for using instant messaging are geared toward orienting oneself with others, as well as forming and maintaining social bonds.

The goal of the hypotheses in this study was to identify relationships between shyness and other factors. Hypothesis 1 intended to examine whether one's level of shyness influences his or her motives for using instant messaging programs. Communication traits or predispositions influence an individual's motives for engaging in interpersonal communication. Findings from the current study suggest there is a positive relationship between one's level of shyness and his or her likelihood of using instant messaging programs to communicate for affection and inclusion. The current findings suggest that, though shy individuals may be intimidated or nervous in certain contexts, they still desire and need to be included. Communicating in an online context through instant messaging gives these shy individuals a functional alternative to communication, allowing them to abate their fear or timidity and meet their needs for inclusion. Research shows that shy individuals are less shy when engaging in interpersonal communication in an online context (Albright et al., 1995; Reid, 1991; Roberts et. al, 2000; Turkle, 1995). Thus, if shy individuals feel less inhibited — and less shy — while communicating in online contexts, they are able to use this medium to comfortably meet their interpersonal needs.

The relationship between inclusion and shyness is consistent with Rubin et al.'s (1998) finding that higher apprehensive individuals were more likely to seek

inclusion than those who are less apprehensive. While Rosenfeld and Frandsen (1972) found that reticent students expressed lower inclusion and affection needs than nonreticent students, and Rubin et al. (1988) found a negative relationship between communication apprehension and affection, these discrepancies from the current study may be attributed to context. The aforementioned studies measured the motives of students in offline contexts. Because shy individuals may be hesitant to share their affection or fill inclusion needs in unfamiliar or public situations, they would appear to have lower needs in offline contexts. However, they are able to fulfill these needs by turning to another outlet — in this case, instant messaging.

Results indicated that the motive of control was the lowest need fulfilled through instant messaging. It may be that control is not as prominent as the motives to experience pleasure, show affection, feel included in a group, or relax or escape from one's daily tasks. Additionally, an online context may not be the best means through which to control others as it occurs through a mediated channel – the computer. Face-to-face communication may allow one to exhibit more force or control. Rubin et al. (1988) found that “little satisfaction is gained from interpersonal control” (p. 621). If one receives little satisfaction from engaging in controlling behavior, it would stand to reason that control would be less used as a motivation because it is not interpersonally gratifying.

Predispositions for computer anxiety were not statistically significantly related to any motive. Whether an individual is confident of his or her computing abilities, he or she has the same motives that need to be fulfilled. Further, this sample consisted solely of college students who are currently enrolled in a degree program. As most colleges and universities in the United States currently have some sort of technology learning program — whether by requiring students to have laptops or take a basic



computer course — the students in this study may differ in their levels of anxiety from the rest of the general population. A subject in this study who was highly computer anxious, yet has typed papers, sent e-mail, and used instant messaging programs, is quite different from an individual who has never turned on, let alone used, a computer. Thus, the anxiety and apprehension levels in this sample may be minimized enough that the motivations and needs from one group to another are not different enough to warrant significance.

Predispositions for writing apprehension anxiety were not statistically significantly related to any motive, except control. A post hoc test noted that there is a negative relationship between writing apprehension and control ( $r = .103$ ,  $N = 402$ ,  $p < .05$ ). This may be because those who write well, and are confident of their writing abilities, are more adept at using written words to influence others. However, that is beyond the focus of this study. The lack of differentiation between other motives may again be due to the fact that this sample consisted of students who are required to take at least two English courses as part of their degree program. Thus, the results from the sample in this study may differ in their levels of writing apprehension from the general population.

Hypothesis two aimed to build on the first hypothesis by analyzing not only why individuals use instant messaging programs, but also to whom they communicate. It was speculated that shyness may influence the people to whom individuals choose to talk via instant messaging programs. The results from the current study suggest that less shy individuals are more likely than highly shy individuals to use instant messaging programs to talk to coworkers, friends from school, and peers. Specifically, less shy individuals talk to co-workers at a rate of 2.55 on a Likert scale, moderately shy individuals talk to them at 2.53, and highly shy

individuals talk to them at a rate of 2.17. Less shy individuals talk to friends from school at a rate of 4.58, moderately shy talk to them at 4.55, and highly shy individuals talk to them at a rate of 4.25. Less shy individuals talk to peers at a rate of 4.09, and highly shy individuals talk to them at a rate of 3.73. However, highly shy individuals are more likely to talk to people they have never met in person than those who are less shy. Specifically, less shy individuals talk to people they have never met in person at a rate 1.62, and highly shy individuals talk to them at a rate of 2.00. Finally, there was no relationship between one's level of shyness and how often he or she uses instant messaging programs to talk to acquaintances, family, or friends from home.

Less shy individuals are more likely than highly shy individuals to use instant messaging programs to talk to coworkers, friends from school, and peers. Because less shy people are not afraid of being evaluated by others or placed into ambiguous situations, they are comfortable talking to those with whom they have business relationships, shorter histories, or weaker social ties. Shy individuals, on the other hand, are less likely to communicate with these groups of people because they fear rejection from these groups, as they do not have strong relationships with them (Jackson, Towson & Narduzzi, 1997).

Highly shy individuals may be more likely to communicate with individuals they have never met in person because the computer-mediated environment's lack of direct nonverbal cues (Kiesler et al., 1984; Sproull & Kiesler, 1986) may allow the individual to open up. Further, the fact that they have never come face-to-face with the other person may decrease their fear of scrutiny and evaluation (Sproul & Kiesler, 1986) and allow them to save face. They may not feel as comfortable

around other groups of people because they do interact with the others in offline contexts.

The lack of difference in the rates at which shy and nonshy individuals communicate with family and friends from home may be due to the long-standing relationship between the parties. Shyness is most prevalent when people feel they are under scrutiny (Crozier, 1990), and individuals may feel less scrutinized by their families, with whom they have a permanent relationship, and friends from home, whom they may have known and had a relationship with for years. As this analysis of instant messaging motivations and relationship to one's level of shyness was largely exploratory, it did not delve into all the intricacies of instant messaging gratifications and shyness. However, future research could benefit from analyzing whether individuals talk to certain people or discuss particular topics to fill their gratification needs.

While these results are interesting and significant, caution must be used in interpreting them. Several recent studies suggested that highly shy individuals are no different from less shy individuals when communicating via e-mail (Kelly et al., 2001), the Internet (Roberts et al., 2000), and other forms of computer-mediated communication (Stritzke, et al., 2004). The results from the current study appear to offer mixed support for those findings, as shy and nonshy individuals are similar only in talking to friends from home, family, and acquaintances. However, the other studies investigated actual levels of shyness in people both offline and online using the RCBSS.

The current study only gathered information about how often individuals talk to categories of people using instant messaging programs. It did not ask how often individuals choose to talk to each category of person in offline contexts, or even

through other forms of computer-mediated communication, such as e-mail, chat rooms, or threaded discussions. As such, there is no way to compare how often an individual talks to someone in offline versus online contexts. For example, it is very possible that a shy person talks to coworkers at an extremely low rate in face-to-face conversations, but he or she could talk to them at a significantly higher rate online. Thus, what is of importance is not if nonshy and highly shy individuals talk to others at different rates, but if shy individuals are more likely to talk to others using instant messaging programs than they are in face-to-face situations. While previous research suggests that shy individuals do open up in online contexts (Albright & Turkle, 1995; Conran, 1995; Reid, 1991; Roberts et al., 2000; Stritzke, et al., 2004), further research should explore this topic in the realm of instant messaging programs.

Hypothesis 3 analyzed the relationship between one's communicative predispositions — shyness, writing apprehension, and computer anxiety — and the amount of time her or she actively spent using instant messaging programs. It was posited that highly shy individuals use instant messaging more often than less shy individuals because it is a comfortable alternative to face-to-face conversation, that the highly computer anxious would use it less than the less anxious because instant messaging uses the computer and Internet as a medium, and that the highly writing apprehensives would use it more infrequently than less apprehensive individuals because instant messaging is almost completely text-based. However, this is not the case.

Interestingly, there was no relationship between one's communicative predispositions and the amount of time he or she actively spent using instant messaging programs. This could be due to a variety of reasons. The first

explanation relates to the framework for this study – uses and gratifications. In this vein, there may be no relationship between one's dispositions and instant messaging use. In other words, communicative predispositions, and especially shyness, are not related to the length of time spent online but to the reasons one chooses to use online instant messaging programs. For example, the results suggest that shy individuals are more likely than nonshy individuals to use instant messaging programs for inclusion and affection. It may take individuals different amounts of time to fill those needs — be it five minutes or five hours — but the important finding is that they are using this technology to fill their needs. In addition, the research question found that 79.2% of all subjects, regardless of shyness levels, use instant messaging programs for escape. They may need a diversion after a long day, seek distraction from stressful or mundane tasks, or need a break from completing class assignments or doing housework. The amount of time it takes for these people varies, as some may only need a few minutes to regroup while others need substantially longer periods of time. The length of time it takes individuals to meet their needs is not as important as the needs themselves, as well as the fact that they are able to meet them through instant messaging programs.

A second explanation is that there is, in fact, a relationship between one's traits and hours spent using instant messaging each day, but this study failed to uncover it. This can be attributed to the fact that the measure in this study was entirely a self-report questionnaire, which relies on each subject's good-faith and ability to accurately recollect knowledge about themselves and their world — including how much time they actively spent using instant messaging the previous day. Subjects could have knowingly or unknowingly entered an amount of time that did not accurately reflect their actual online usage. Further research would benefit

from finding another way to measure how long subjects spend online in one day. A media log, much like the ones used in television viewing research would be helpful in obtaining a more accurate time frame. It would also be advantageous if future research determined how long individuals spend engaged in other interpersonal communication activities in order to compare the ratio between face-to-face and online communication.

As uses and gratifications theory explains, individuals turn to media to satisfy particular needs. Based on their study of electronic media, Dimmick and Albarran (1994) suggest that “a distinguishing feature of the new media is that they offer an expanded array of gratification opportunities to the viewer rather than new or unique gratifications” (p. 233). The current study supports their findings. Instant messaging programs offer the same gratifications — affection, inclusion, control, pleasure, escape, relaxation — as have been found in various other media, including television, radio, and even face-to-face communication.

However, as a new medium, instant messaging programs offer expanded opportunities for one to meet his or her needs. For example, a high speed Internet connection allows one to have constant access to countless other people online. By having many people on one’s buddy list and with the ability to access the list at any time, it is highly probable that an individual will be able to find someone with whom to communicate using an instant messaging programs.

While it was not considered in the current study, some instant messaging programs, such as AOL Instant Messenger, offer the ability to chat with bots, or computer-generated “buddies” who are programmed using artificial intelligence to communicate with humans over instant messaging. Thus, if a person turned to instant messaging to fill a need, but no one was available on his or her buddy list, he

or she could chat with a bot. As such, unlike face-to-face contexts that require a chance or pre-planned encounter in a particular location or telephone contexts that require the other person be available and the call take place at a decent time of day, instant messaging conversation allow instant access from the convenience of one's home or business to many people at any time of day.

The idea in uses and gratifications that people are able to effectively control or alter media content to shape their needs has direct application to the current study. Individuals using instant messaging programs are easily able to manipulate it in order to create an optimal communication environment based on their needs. As uses and gratifications suggests, individuals turn to a particular medium in order to meet needs – of which they are aware.

The theory is particular noteworthy in this study because nearly eighty percent of individuals, regardless of their other communicative predispositions, turn to instant messaging programs as a means to escape. In this way, instant messaging serves a utilitarian and encompassing purpose, as the vast majority of individuals are able to conveniently meet their escape needs through this medium.

In addition, the uses and gratifications framework offers an explanation for shy individuals' choices to use instant messaging programs to meet their inclusion needs. The current study found that shy individuals are likely to use instant messaging programs to meet their inclusion and affection needs at a significantly higher rate than their less shy counterparts. As shyness stems from a fear of being judged by others, it is possible that, due to the context of instant messaging programs, shy individuals are provided with an environment that makes them feel less scrutinized and more able to freely interact with others and express their feelings in order to meet their needs for inclusion and affection, respectively. A



second reason why shy individuals are more likely to fill their inclusion and affection needs through these programs may be because users can take their time to formulate and type a response. Unlike face-to-face or telephone conversations, which require prompt responses so the conversation does not have long awkward pauses, a delay in typing a response in instant messaging programs is common. In these pauses, shy individuals may take their time to formulate their thoughts and respond without any negative consequences.

In analyzing the relational maintenance and gratification opportunities of e-mail, Stafford et al. (1999) found that computer mediated communication enhances relational connections. They argue it is possible that personal relationships, which traditionally were formed and fostered through face-to-face communication, may be found more and more frequently through mediated forms. The findings of the current study support this notion, as many people use instant messaging programs to communicate with friends, family, and co-workers, among others. The fact that instant messaging programs can enhance relational connections means individuals are able to meet their basic need to communicate with others. In addition, the programs are able to fulfill other basic needs. While these needs may vary for each person, instant messaging programs are able to meet some sort of need for all people. Specifically, the inclusion and affection needs that are filled for shy individuals have immense implications for the field of communication.

As was discussed in the review of literature, 87 percent of shy individuals are willing to take steps to overcome their shyness (Carducci & Clark, 1993). Shy people may engage in a variety of behaviors, including forcing themselves into social situations, attending workshops, reading self-help books, seeking professional help, and even abusing substances in order to lower their inhibitions (Carducci, 2000).



However, the current options lack the ability to give shy individuals practical experience in using appropriate and effective communication skills. If the individuals were able to experience successful communication without the repercussions they fear, their levels of self confidence would be bolstered, allowing them to feel more prepared in subsequent conversations. Here, instant messaging programs may play a vital role.

The results of this study suggest that shy individuals already turn to instant messaging programs to fulfill a variety of needs – especially inclusion and affection. As such, the programs are something they are able and willing to use. In addition, the results of a post hoc test conducted in the current study suggest there is a negative relationship between one's experience with instant messaging programs and shyness. While no cause and effect relationship can be established based on these results, it may be posited that people who have more experience with instant messaging are less shy. Thus, it is possible that if shy individuals garnered more experience with instant messaging programs, then their shyness would decrease.

The idea that using a form of computer mediated communication can decrease shyness corroborates a multitude of other studies that found shy individuals are less shy when participating in synchronous computer mediated communication than in face-to-face situations (Albright & Turkle, 1995; Conran, 1995; Reid, 1991; Roberts et al., 2000; Stritzke et al., 2004). More importantly, after participating in computer mediated communication for a six month period, shy individuals reported feeling less shy both in online and offline contexts (Roberts et al., 2000). Based on these results, Roberts et al. (2000) argue that computer mediated communication usage improves individuals' social skills while allowing them a means by which to break out of a cycle of shyness.

Such research illustrates that using computer mediated communication meets the various needs of shy individuals and meets their interpersonal needs. The findings of the current study suggest that instant messaging programs may be added to the growing list of tools in the computer mediated environment that permit gratifying communicative opportunities.

Based on the findings of the current study, in concurrence with previous findings, instant messaging programs may be a beneficial and therapeutic tool, allowing shy individuals to satisfy the basic need of interacting with others. In finding ways to communicate with others online, instant messaging programs may offer shy individuals the ability to engage in a variety of social activities that are otherwise unavailable to them in offline contexts because of their inhibition and anxiety. Instant messaging programs can be seen as a positive and empowering tool for shy individuals to interact with others, obtain information, find support, and share affection, amongst other behaviors, without the adverse affects that inhibit them from participating in the same behaviors in offline contexts. Because these programs allow shy individuals to successfully meet their interpersonal needs, it may be considered as a functional alternative to anxiety-arousing face-to-face situations, and it may reduce shyness and anxiety. In addition, after shy individuals have established successful communication using instant messaging programs, they may branch out and adopt these new behaviors to other contexts.

### Limitations

One limitation of the current study is that it only gathered information about subject's style of communication using instant messaging programs. Based on this information, the results show that less shy individuals use instant messaging

programs to communicate with more categories of people than highly shy individuals. However, there is no basis for comparison because there is no information on how often individuals talk to these same categories of people in face-to-face situations or other contexts (phone, e-mail, etc.). Comparing the frequency with which individuals speak to friends, family, and co-workers face-to-face and using instant messaging programs could lead to interesting and important results. Specifically, while shy individuals talk to some groups on instant messaging programs at a lower frequency than their less shy counterparts, they may talk to these same groups of people much more often online than in person.

While studies found that shy individuals are not significantly different from nonshy individuals in online contexts (Stritzke et al., 2004) and individuals are less inhibited in text-based virtual environments than in face-to-face settings (Roberts et al., 2000), the current study's lack of information about communication behavior in non-instant messaging contexts prevents such conclusions from being drawn.

A second limitation involves the sample used in the current study. Specifically, the current sample consists of college students. As these students have grown up in the technological era, they are likely to be comfortable using and communicating with instant messaging programs. In addition, the Midwestern University from which the sample was drawn has several technology initiatives, including requiring all incoming students to purchase a University-approved computer, as well as supports technology by having hundreds of wireless access points and encouraging professors to use technology in the classroom. Thus, these students all have access to high-speed Internet access and current computers, which may influence their comfort with and use of instant messaging programs. For these reasons, the sample is quite different from the general population, which

contains people who have never used a computer, let alone are familiar with the Internet or synchronous chat programs. While the current study tried to account for this by asking questions to determine the subjects' levels of computer apprehension, future research should expand this sample to include a wide range of ages, socio-economic status, and experience with technologies.

In addition, college students are likely to constantly leave instant messaging programs turned on – even if they are not using them. Often, instant messaging programs are used in a means similar to an answering machine, as other people can leave a person an instant message even if the recipient is not there. Thus, even if one does not spend much time actively chatting via instant messaging programs, he or she could receive several messages — obtaining information, inclusion, or affection — without technically spending any time online. This convolution was not accounted for in the current study and should be taken into consideration for other studies.

A third limitation stems from the fact that the study used a self-report questionnaire. It is possible that subjects' responses to certain questions were inaccurate. This may especially be problematic for the questions that asked how long subjects chatted via instant messaging programs, as they may have significantly under- or overestimated the length of their chat sessions. Future research should measure actual instant messaging behavior or employ the use of media diaries to assess if there are differences between shy and nonshy individuals.

#### Implications for future research

The current study is an initial step at analyzing not only what motives individuals have for using instant messaging programs, but also if communication

predispositions plays a role in why one uses such programs, with whom he or she communicates, and for what period of time. Because technology is currently evolving and expanding at such an accelerated pace, this area remains largely unexplored, and it needs further exploration.

Previous studies found that highly shy individuals take longer to begin speaking, are slower to break a silence or lull in conversation, and speak for a smaller proportion of time (Bruch, Gorsky, Collins, & Berger, 1989; Cheek & Buss, 1981; Pilkonis, 1977). It would be interesting for future studies to compare these variables in face-to-face and instant messaging contexts. The amount of time it takes for a person to speak to another person, versus the amount of time it takes them to respond to an instant message could be compared.

A second area that would benefit from future research is to study the uses and gratifications of instant messaging programs and their relationship to individuals' levels of satisfaction with instant messaging programs. As the findings in the current study suggest that there is no relationship between either interpersonal motives or communication predispositions and time spent chatting online, it will be important to uncover to what these variables are related. It is possible that one's level of satisfaction with the program drives what needs he or she chooses to fill online or account for large amounts of variance in the model.

## Conclusion

While countless theories abound and speculate about the importance of computer mediated communication or make an attempt at interpreting its effects, uses and gratification theory serves to illuminate the effects by addressing the role of

the individual in the process. Technology is not something that haphazardly or irrevocably produces a certain reaction or effect in individuals. Rather, people play an active role in the communication process by selecting media that fulfill their varied interpersonal needs. The current study discovered that, like face-to-face communication, instant messaging in the computer mediated communication environment serves to meet six interpersonal motives. In particular, the vast majority of users choose to use instant messaging to fulfill their escape needs, while a small minority uses it for control. Because it fulfills the same needs as face-to-face communication, instant messaging may be viewed as a functional alternative. Instant messaging programs may also be considered as a therapeutic tool to give shy individuals a chance to learn and practice appropriate and effective communication skills.

Further, this study explored the role communication predispositions play in computer mediated communication. It found shy individuals were significantly more likely and able to meet their inclusion and affection needs through instant messaging. The current study also noted that the time one spends chatting online is not significantly related to any of the other variables analyzed in the study. While initially surprising, this finding supports the uses and gratifications theory, as the importance of instant messaging programs is in what needs are being filled, rather than how long it takes to satiate them. Further examination of such factors, along with improvements to the measurement technique, may improve our understanding of the relationship between the characteristics of computer mediated communication, especially instant messaging programs, and the characteristics of the individuals who use it.

## APPENDIX A

### Instant Messaging Motives and Traits Measure

**DIRECTIONS:** This instrument asks why you use instant messaging programs. Indicate if each statement applies to you by marking whether you (1) strongly disagree, (2) disagree, (3) are undecided, (4) agree, or (5) strongly agree.

<b>"I talk to people on IM..."</b>	<b>SD</b>	<b>D</b>	<b>U</b>	<b>A</b>	<b>SA</b>
1. Because it's fun.	1	2	3	4	5
2. Because it's exciting.	1	2	3	4	5
3. To have a good time.	1	2	3	4	5
4. Because it's thrilling.	1	2	3	4	5
5. Because it's stimulating.	1	2	3	4	5
6. Because it's entertaining.	1	2	3	4	5
7. Because I enjoy it.	1	2	3	4	5
8. Because it peps me up.	1	2	3	4	5
9. To help others.	1	2	3	4	5
10. To let others know I care about their feelings.	1	2	3	4	5
11. To thank them.	1	2	3	4	5
12. To show others encouragement.	1	2	3	4	5
13. Because I'm concerned about them.	1	2	3	4	5
14. Because I need someone to talk to.	1	2	3	4	5
15. Because I need to talk about my problems sometimes.	1	2	3	4	5
16. Because it makes me feel less lonely.	1	2	3	4	5
17. Because it's reassuring to know someone is there.	1	2	3	4	5
18. To put off doing something I should be doing.	1	2	3	4	5
19. To get away from what I'm doing.	1	2	3	4	5
20. Because I have nothing better to do.	1	2	3	4	5
21. To get away from pressures and responsibilities.	1	2	3	4	5
22. Because it relaxes me.	1	2	3	4	5
23. Because it allows me to unwind.	1	2	3	4	5
24. Because it's a pleasant rest.	1	2	3	4	5
25. Because it makes me feel less tense.	1	2	3	4	5
26. Because I want someone to do something for me.	1	2	3	4	5
27. To tell others what to do.	1	2	3	4	5
28. To get something I don't have.	1	2	3	4	5



**DIRECTIONS:** This instrument is composed of statements about your communication style. Indicate the degree to which each statement applies to you by marking whether you (1) strongly disagree, (2) disagree, (3) are undecided, (4) agree, or (5) strongly agree. Work quickly; record your first impression.

	<b>SD</b>	<b>D</b>	<b>U</b>	<b>A</b>	<b>SA</b>
29. I feel tense when I'm with people I don't know well.	1	2	3	4	5
30. I avoid writing.	1	2	3	4	5
31. I am confident that I could learn computer skills.	1	2	3	4	5
32. I am socially somewhat awkward.	1	2	3	4	5
33. I have no fear of my writing being evaluated.	1	2	3	4	5
34. I am unsure of my ability to learn a computer programming language.	1	2	3	4	5
35. I do not find it difficult to ask other people for information.	1	2	3	4	5
36. People seem to enjoy what I write.	1	2	3	4	5
37. I am sure of my ability to interpret a computer output.	1	2	3	4	5
38. I am often uncomfortable at parties and other social functions.	1	2	3	4	5
39. I enjoy writing.	1	2	3	4	5
40. I will be able to keep up with the important technological advances of computers.	1	2	3	4	5
41. When in a group of people, I have trouble thinking of the right things to talk about.	1	2	3	4	5
42. Expressing ideas through writing seems to be a waste of time.	1	2	3	4	5
43. I have difficulty understanding most technological matters.	1	2	3	4	5
44. It does not take me long to overcome my shyness in new situations.	1	2	3	4	5
45. I don't think I write as well as most other people do.	1	2	3	4	5
46. I feel apprehensive about using a computer terminal.	1	2	3	4	5
47. It is hard for me to act natural when I am meeting new people.	1	2	3	4	5
48. I like to write my ideas down.	1	2	3	4	5



49. If given the opportunity to use a computer, I'm afraid that I might damage it in some way.	1	2	3	4	5
50. I feel nervous when speaking to someone in authority.	1	2	3	4	5
51. I feel confident in my ability to clearly express my ideas in writing.	1	2	3	4	5
52. Computer terminology sounds like confusing jargon to me.	1	2	3	4	5
53. I have no doubts about my social competence.	1	2	3	4	5
54. I am no good at writing.	1	2	3	4	5
55. I have avoided computers because they are unfamiliar to me.	1	2	3	4	5
56. I have trouble looking someone right in the eye.	1	2	3	4	5
57. I am nervous about writing.	1	2	3	4	5
58. I hesitate to use a computer for fear of making mistakes that I can not correct.	1	2	3	4	5
59. I feel inhibited in social situations.	1	2	3	4	5
60. I do not find it hard to talk to strangers.	1	2	3	4	5
61. I am shy with members of the opposite sex.	1	2	3	4	5
62. I never seem to be able to clearly write down my ideas.	1	2	3	4	5
63. Writing is a lot of fun.	1	2	3	4	5
64. I like seeing my thoughts on paper.	1	2	3	4	5
65. Discussing my writing with others is an enjoyable experience.	1	2	3	4	5
66. It is easy for me to write good compositions.	1	2	3	4	5
67. I don't like my compositions to be evaluated.	1	2	3	4	5
68. I look forward to writing down my ideas.	1	2	3	4	5
69. My mind seems to go blank when I start to work on a composition.	1	2	3	4	5
70. I would enjoy submitting my writing to magazines for evaluation and publication.	1	2	3	4	5
71. I like to have my friends read what I have written.	1	2	3	4	5

DIRECTIONS: Complete the following questions about your use of IM programs, such as AIM, ICQ, MSN Messenger, and Yahoo! Instant Messenger.

72. Yesterday, how long (hours and minutes) did you **actively** spend chatting on IM? (Include only time spent on IM, not e-mail, chat rooms or other online programs and not times you were not talking to someone, idle, or away.) \_\_\_\_\_

73. Was yesterday typical of your instant messaging usage? \_\_\_\_\_

74. If NO, how long (hours and minutes) do you **normally** spend chatting on IM? (Include only time spent on IM, not e-mail, chat rooms or other online programs and not times you were not talking to someone, idle, or away.) \_\_\_\_\_

75. How long have you been using instant messaging programs?

- \_\_\_\_\_ Have never used
- \_\_\_\_\_ 0-6 months
- \_\_\_\_\_ 7-12 months
- \_\_\_\_\_ 1-2 years
- \_\_\_\_\_ 3-4 years
- \_\_\_\_\_ 5+ years

75. With whom do you communicate with through IM (check all that apply)?

- \_\_\_\_\_ Acquaintances
- \_\_\_\_\_ Co-Workers
- \_\_\_\_\_ Family
- \_\_\_\_\_ Friends from home
- \_\_\_\_\_ Friends from school
- \_\_\_\_\_ Peers (people in your classes)
- \_\_\_\_\_ People you've never met in person
- \_\_\_\_\_ Professors
- \_\_\_\_\_ Other (please explain) \_\_\_\_\_

76. Indicate how often you communicate with the following people:

- |                               |       |        |           |       |        |
|-------------------------------|-------|--------|-----------|-------|--------|
| a. Acquaintances              | Never | Rarely | Sometimes | Often | Always |
| b. Co-workers                 | Never | Rarely | Sometimes | Often | Always |
| c. Friends from home          | Never | Rarely | Sometimes | Often | Always |
| d. Friends from school        | Never | Rarely | Sometimes | Often | Always |
| e. Peers                      | Never | Rarely | Sometimes | Often | Always |
| g. People never met in person | Never | Rarely | Sometimes | Often | Always |
| h. Teachers/professors        | Never | Rarely | Sometimes | Often | Always |

77. Indicate how often you do the following **at the same time** as you use instant messaging programs.

a. Watch TV/movies	Never	Rarely	Sometimes	Often	Always
b. Listen to music	Never	Rarely	Sometimes	Often	Always
c. Talk on phone	Never	Rarely	Sometimes	Often	Always
d. Talk to people in the room with me	Never	Rarely	Sometimes	Often	Always
e. Read for pleasure	Never	Rarely	Sometimes	Often	Always
g. Read for school	Never	Rarely	Sometimes	Often	Always
h. Write papers/do homework	Never	Rarely	Sometimes	Often	Always

78. What activities not mentioned above (watching TV, etc) do you do while chatting on instant messaging programs?

DIRECTIONS: Please complete the following questions about yourself. They will be used for research purposes only, and your answers will not be shared with others.

79. Gender:

☐ Male  
☐ Female

80. Race:

☐ African-American  
☐ Asian  
☐ Caucasian  
☐ Hispanic  
☐ Native American  
☐ Other/Prefer not to answer

81. Age: \_\_\_\_\_

82. Year in school

- ☐ High school freshman
- ☐ High school sophomore
- ☐ High school junior
- ☐ High school senior
- ☐ College freshman
- ☐ College sophomore
- ☐ College junior
- ☐ College senior
- ☐ College fifth-year
- ☐ Graduate student
- ☐ Other

82. Major (if in college): \_\_\_\_\_

## APPENDIX B

### Interpersonal Communication Motives: Primary Factor Loadings

**DIRECTIONS:** This instrument asks why you communicate with others. Indicate the degree to which each statement applies to you by marking whether you (1) strongly agree, (2) agree, (3) are undecided, (4) disagree, or (5) strongly disagree.

#### **“I talk to people...”**

- \_\_\_ 1. Because it's fun
- \_\_\_ 2. Because it's exciting
- \_\_\_ 3. To have a good time
- \_\_\_ 4. Because it's thrilling
- \_\_\_ 5. Because it's stimulating.
- \_\_\_ 6. Because it's entertaining.
- \_\_\_ 7. Because I enjoy it.
- \_\_\_ 8. Because it peps me up.
- \_\_\_ 9. To help others.
- \_\_\_ 10. To let others know I care about their feelings.
- \_\_\_ 11. To thank them.
- \_\_\_ 12. To show others encouragement.
- \_\_\_ 13. Because I'm concerned about them.
- \_\_\_ 14. Because I need someone to talk to.
- \_\_\_ 15. Because I need to talk about my problems sometimes.
- \_\_\_ 16. Because it makes me feel less lonely.
- \_\_\_ 17. Because it's reassuring to know someone is there.
- \_\_\_ 18. To put off doing something I should be doing.
- \_\_\_ 19. To get away from what I'm doing.
- \_\_\_ 20. Because I have nothing better to do.
- \_\_\_ 21. To get away from pressures and responsibilities.
- \_\_\_ 22. Because it relaxes me.
- \_\_\_ 23. Because it allows me to unwind.
- \_\_\_ 24. Because it's a pleasant rest.
- \_\_\_ 25. Because it makes me feel less tense.
- \_\_\_ 26. Because I want someone to do something for me.
- \_\_\_ 27. To tell others what to do.
- \_\_\_ 28. To get something I don't have.

**SCORING:** The interpersonal communication motives should load as follows:

- Pleasure: Items 1, 4, 7, 10, 13, 16, 19, 22
- Affection: Items 2, 9, 15, 17, 24
- Inclusion: Items 3, 11, 18, 25
- Escape: Items 5, 12, 20, 26
- Relaxation: Items 6, 14, 21, 27
- Control: 8, 23, 28

From: Rubin, R.B., Perse, E.M. & Barbato, C.A. (1988). Conceptualization and measurement of interpersonal communication motives. *Human Communication Research*, 14, 602-628.

## APPENDIX C

### Computer Anxiety Scale

**DIRECTIONS:** This instrument is composed of twenty-four statements concerning feelings about communicating with other people. Please indicate the degree to which each statement applies to you by marking whether you (1) strongly agree, (2) agree, (3) are undecided, (4) disagree, or (5) strongly disagree. Work quickly; record your first impression.

- \_\_\_\_\_ 1. I am confident that I could learn computer skills.
- \_\_\_\_\_ 2. I am unsure of my ability to learn a computer programming language.
- \_\_\_\_\_ 3. I am sure of my ability to interpret a computer output.
- \_\_\_\_\_ 4. I will be able to keep up with the important technological advances of computers.
- \_\_\_\_\_ 5. I have difficulty understanding most technological matters.
- \_\_\_\_\_ 6. I feel apprehensive about using a computer terminal.
- \_\_\_\_\_ 7. If given the opportunity to use a computer, I'm afraid that I might damage it in some way.
- \_\_\_\_\_ 8. Computer terminology sounds like confusing jargon to me.
- \_\_\_\_\_ 9. I have avoided computers because they are unfamiliar to me.
- \_\_\_\_\_ 10. I hesitate to use a computer for fear of making mistakes that I can not correct.

**SCORING:** To determine your score on the computer anxiety scale, reverse code items 1, 3 and 4. Then add all the numbers. The resulting score should be between 10 and 50.

From Raub, A.C. (1981). Correlates of computer anxiety in college students. Unpublished doctoral dissertation, University of Pennsylvania. Quoted in Ray, N.M. & Minch, R. (1990). Computer anxiety and alienation: Toward a definitive and parsimonious measure. *Human Factors*, 32, 477-491.

## APPENDIX D

### Writing Apprehension Test (WAT)

**DIRECTIONS:** Indicate whether or not you believe each statement below applies to you by marking whether you (1) strongly agree, (2) agree, (3) are undecided, (4) disagree, or (5) strongly disagree. Work quickly; record your first impression.

1. I avoid writing.	1	2	3	4	5
2. I have no fear of my writing being evaluated.	1	2	3	4	5
3. I look forward to writing down my ideas.	1	2	3	4	5
4. My mind seems to go blank when I start to work on a composition.	1	2	3	4	5
5. Expressing ideas through writing seems to be a waste of time.	1	2	3	4	5
6. I would enjoy submitting my writing to magazines for evaluation and publication.	1	2	3	4	5
7. I like to write my ideas down.	1	2	3	4	5
8. I feel confident in my ability to clearly express my ideas in writing.	1	2	3	4	5
9. I like to have my friends read what I have written.	1	2	3	4	5
10. I am nervous about writing.	1	2	3	4	5
11. People seem to enjoy what I write.	1	2	3	4	5
12. I enjoy writing.	1	2	3	4	5
13. I never seem to be able to clearly write down my ideas.	1	2	3	4	5
14. Writing is a lot of fun.	1	2	3	4	5
15. I like seeing my thoughts on paper.	1	2	3	4	5
16. Discussing my writing with others is an enjoyable experience.	1	2	3	4	5
17. It is easy for me to write good compositions.	1	2	3	4	5
18. I don't think I write as well as most other people do.	1	2	3	4	5
19. I don't like my compositions to be evaluated.	1	2	3	4	5
20. I am no good at writing.	1	2	3	4	5

SCORING: To determine your score on the WAT, complete the following steps:

Step 1. Add scores for items 1, 4, 5, 10, 13, 18, 19, and 20

Step 2. Add the scores for items 2, 3, 6, 7, 8, 9, 11, 12, 14, 15, 16, 17

Step 3. Complete the following formula:

$$\text{WAT} = 48 - \text{Total from Step 1} + \text{Total from Step 2}$$

Your score should be between 20 and 100.

Modified and reproduced from Daly, J. A., & Miller, M. D. (1975). The empirical development of an instrument to measure writing apprehension. *Research in Teaching of English*, 9, 242-249.



## APPENDIX E

### The Revised Cheek and Buss Shyness Scale (RCBSS)

**INSTRUCTIONS:** Please read each item carefully and decide to what extent it is characteristic of your feelings and behavior. Fill in the blank next to each item by choosing a number from the scale printed below.

- 1 = Very uncharacteristic or untrue, strongly disagree  
 2 = Uncharacteristic  
 3 = Neutral  
 4 = Characteristic  
 5 = Very characteristic or true, strongly agree

- \_\_\_\_\_ 1. I feel tense when I'm with people I don't know well.
- \_\_\_\_\_ 2. I am socially somewhat awkward.
- \_\_\_\_\_ 3. I do not find it difficult to ask other people for information.
- \_\_\_\_\_ 4. I am often uncomfortable at parties and other social functions.
- \_\_\_\_\_ 5. When in a group of people, I have trouble thinking of the right things to talk about.
- \_\_\_\_\_ 6. It does not take me long to overcome my shyness in new situations.
- \_\_\_\_\_ 7. It is hard for me to act natural when I am meeting new people.
- \_\_\_\_\_ 8. I feel nervous when speaking to someone in authority.
- \_\_\_\_\_ 9. I have no doubts about my social competence.
- \_\_\_\_\_ 10. I have trouble looking someone right in the eye.
- \_\_\_\_\_ 11. I feel inhibited in social situations.
- \_\_\_\_\_ 12. I do not find it hard to talk to strangers.
- \_\_\_\_\_ 13. I am more shy with members of the opposite sex.

**SCORING:** Items 3, 6, 9 & 12 are reversed, recode before scoring (1=5) (2=4) (4=2) (5=1)

For college students, mean = 33.3. for men and 32.4 for women, alpha coefficient = .90, 45-day retest reliability = .88, correlation with aggregated ratings of shyness by friends and family = .68, and correlation with original 9-item version = .96. This revised scale is copyright 1983, Jonathan M. Cheek. The scale may be used in non-profit educational research without further permission.

For a review of the 13-item RCBS, see Leary, M.R. (1991) Social anxiety, shyness, and related Constructs. In Robinson, J.P., Shaver, P.R., & Wrightsman, L.S. (Eds.), *Measures of Personality and Social Psychological Attitudes* (pp. 182-184). San Diego: Academic Press.

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## VITA

**Kimberly L. Bell**

Graduate Assistant – Communication – University of Dayton

**Education**

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University of Dayton

Graduation: May 7, 2006

*M.A. in Communication*

- Thesis: "Instant Messaging Uses and Gratifications: How Shyness Affects Motivations for Chatting Online"
- Advisor: Dr. James Robinson
- Committee: Dr. Ronda Scantlin and Dr. Teresa Thompson

University of Dayton

Graduation: May 8, 2005

*B.A. in Communication*

- Concentration: Communication Management
- Minors: English and Psychology
- Honors: The Faculty Award for Academic Excellence in Communication (2004)
- Activities: Phi Beta Chi, communication honors society, 2003-2005  
Promotions Chair, 2003-2004

**Teaching Experience**

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Graduate Assistant

University of Dayton

August 2005-present

- Full responsibility for the construction and implementation of lesson plans in introductory communication classes, required of all University of Dayton students
- Group Decision Making (CMM 110, lecture)
- Informative Public Speaking (CMM 111, lecture)

Guest Lecturer

University of Dayton

February 2005

- Uses and gratifications of computer mediated communication (COM 503, lecture)

Student Mentor

University of Dayton

August 2004-May 2005

- Full responsibility for the construction and implementation of lesson plans in a seminar course for first-year communication students
- Introduced students to the department, the communication field, and the University
- Advised students in courses and registration
- First-Year Experience (ASI 111, seminar)

## **Research Experience**

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Research Assistant                      University of Dayton                      August 2005-present  
*Conducted with Dr. James Robinson*

- Conducted research and wrote summaries of various persuasion theories
- Assisted in the compilation of summaries for an undergraduate persuasion textbook

## **Publications**

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- Robinson, J.D., Bell, K.L., & Turner, J. Surgeon general's scientific advisory committee on television and social behavior Accepted for publication in J.J. Arnett (Ed.), *Encyclopedia of children, adolescents, and the media*. Thousand Oaks, CA: Sage.

## **Research Interests**

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- Computer-mediated communication
- Gender communication